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COMMERCIAL CAR JOURNAL
THE MAGAZINE FOR FLEET OPERATORS

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- Reo low-maintenance design

PLUS another, all-new REO GOLD COMET ENGINE

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"Longer life of universal joints —no sudden jolts"
"Differential gears cushioned against shock... longer life assured"
"Wheel spin? No sir! Less slippage— longer tire life"

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Your truck moves forward *smoothly*. With Fluid Drive, there's no grabbing of clutch—no jerky starts. Smooth application of power is *easy* on all moving parts . . . transmission through power line to rear axle gears and tires. Result: Long life; low upkeep.

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One of the great engineering achievements of all time is now available on trucks.

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Note in the illustration above how gýrol Fluid Drive *works* for you. Read, at left, what Fluid Drive *does* for you.

See your Dodge dealer. Ask him to demonstrate a FLUID DRIVE Dodge "*Job-Rated*" truck. *Feel the difference* . . . the *smooth power* of Fluid Drive; the amazing *ease of shifting*.

Remember—the many advantages of gýrol Fluid Drive are available *only* on Dodge "*Job-Rated*" trucks.

For low-cost transportation...switch to

DODGE "Job-Rated" TRUCKS

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COMMERCIAL CAR

Vol. LXXVIII Philadelphia, February, 1950 No. 6

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CCJ Reader Digest

Legislative Outlook for 1950

The Congress will consider important legislative problems affecting the truck transportation industry—notably the Federal highway aid bill and the repeal of automotive excise taxes. In addition 13 States will consider measures dealing with highway planning, anti-diversion, uniform laws, and other legislation. The chances of this legislation being passed this election year are outlined on Page 72.

Few British Trucks "Nationalized"

This report, prepared by a transport consultant from England, clears up many facts and erroneous impressions about the nationalized transportation system in Great Britain. For example, only 3 to 5 per cent of the trucks are nationalized. The Labor government made only a token payment for the truck transportation business it has acquired. Not a single fleet operator has been fully reimbursed for his business. For other facts on Britain's nationalized transportation problems see Page 87.

City of Milwaukee's Centralized PM

The City of Milwaukee has insured maximum utility of the various vehicles in its fleet by establishing a central vehicle pool, centralized PM, and specialized repairs. Harry Stiedemann, Superintendent of the Bureau of Municipal Equipment, tells such a complete story that it is being divided into two parts, each loaded with practical information and illustrations. Part 1 begins on Page 69.

Another Special April Issue

The 1950 Fleet Operator's Manual, scheduled for April, promises even more practical information on selecting, operating and maintaining vehicles than ever before. For the first time in CCJ history complete specifications for buses will be presented, providing tune up, front end, lubrication, battery, tension and valve data for all current models. Owners as well as mechanics will find this issue indispensable the year 'round.

JOURNAL

with which is combined Operation & Maintenance

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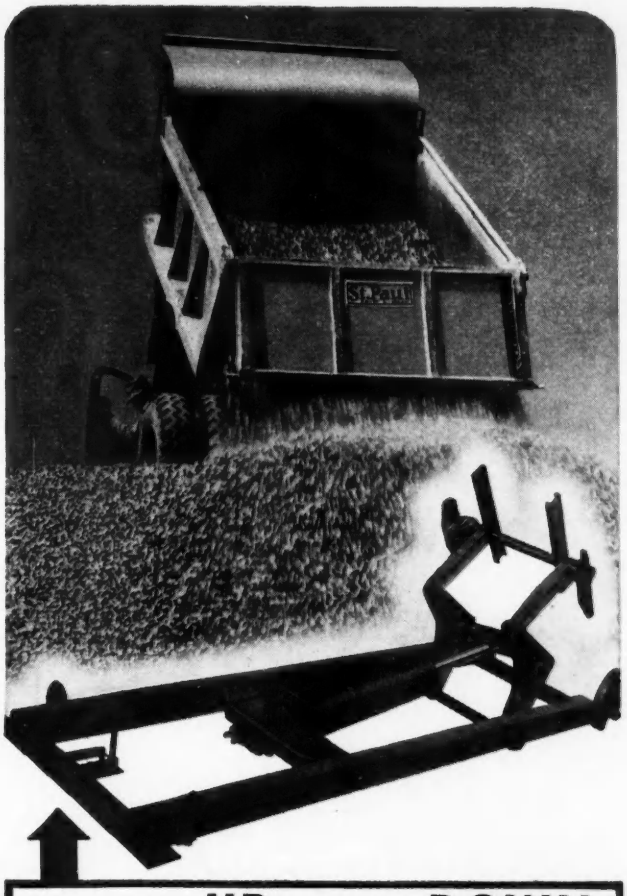
Predicting Road Performance

Here is one of the most practical guides to vehicle selection ever developed. Ten simple steps help the operator determine the vehicle grade climbing ability at a given speed, the maximum speed which can be expected on a level road with specified chassis units, the potential maximum vehicle speed which can be obtained with the ideal selection of the chassis unit. An outgrowth of previous studies, this material has been made readable and easily mastered by everyone in fleet circles. See page 81. For other formulae and information on this same subject, refer to the following articles in CCJ:

Picking the Right Motor Truck for the Job, by Fred Lautzenhizer ..... April, 1946
The Correct Application of Motor Trucks, White Motor Co. ..... February, 1947
Figuring Fifth Wheel Kingpin Offset, by Merrill Horine ..... February, 1948
Road Tests Key Fuel Consumption and Truck Travel Time, by Carl Saal ..... January, 1950

Charleston "Rides With the Stars"

The driver safety award employed by this Charleston, W. Va., bus property has many advantages. It is continuous. Every driver can be a winner. It keeps accident rate down, insurance premiums in line, vehicle maintenance in check. The winners get a new uniform, their pictures published in the local newspaper, congratulations from the riders. The award is part of a six-point safety program. See P. 78.



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FOR THE TRUCKING INDUSTRY

CONFERENCE CORNER

PISTON RINGS

Question: What Determines the Number of Piston Rings Used Per Piston on Various Types and Makes of Engines?

Slow Speed Engines and Higher Compression Engines Require Greater Number of Rings

by C. N. Guerasimoff, Chief Engineer
The Buda Company

There is a close similarity in thinking among the builders of diesel or gasoline engines of the same type and for the same field of application.

You will invariably find that slow speed, heavy-duty engines will have a greater number of rings. As a general rule diesel engines will have a greater number of rings than gasoline engines, primarily due to higher combustion pressures. Automobile engine manufacturers are in a class by themselves. Pleasure car engines normally are operating a high speed and very light load factory. Under these conditions, pistons can be fitted very closely and due to the small clearances, the piston itself to a considerable extent functions as both compression and oil control ring, and under the circumstances the number of piston rings can be reduced to a minimum. That is why in a number of automobile engines three piston rings is sufficient to assure satisfactory compression and lube oil control. The fewer number of rings in high-speed engine is, of course, desirable to reduce excessive friction and cylinder wear.

You will further note that most of the high-speed diesel engine manufacturers are using five rings and that the number of rings is increased in engines of medium and slow speed.

Most of the locomotive diesel engines use approximately seven rings, and large heavy-duty slow speed, such as Nordberg 600 horsepower marine diesel engine operating at 164 rpm, equipped with a piston carrying a total of nine rings.

The Ring Number, Type and Material Represents a Compromise in Design

by Merrill C. Horine, Manager
Sales Training Division
Mack International Motor Truck Corp.

Piston ring arrangements are not designed successfully on the basis of preconceived theory but are necessarily developed by trial and experiment to meet requirements which are usually individual to each separate engine design and which are constantly subject to change as other alterations are made in the design of the engine, the materials used for various affected parts and clearances are altered.

Thus there can be no ideal arrangement for general application and it is difficult to trace definite trends. Piston rings are primarily for the purpose of sealing the gases in the combustion chamber against escape past the piston into the crankcase but in performing this function they involve power losses and wear due to friction. Because they and the piston-swept portion of the bore require lubrication, the rings must serve the further purpose of distributing the oil thrown onto the cylinder walls while at the same time regulating the amount which reaches the cylinder walls to prevent overlubrication or pumping which would result in smoke, excessive oil consumption and deposition of carbon products.

Piston rings are among the hardest-working parts of an engine and while not expensive in themselves, involve considerable expense for labor of replacement. They can be the source of excessive cylinder bore wear as well as wear and other forms of deterioration of the pistons. Consequently multiplicity of compression rings, while it promotes the primary purpose of the ring which is to hold compression,

(TURN TO PAGE 10, PLEASE)

B.F. Goodrich

Northern Transportation Company, Los Angeles, use BFG *STORE DOOR* tires (above) on front wheels; new BFG *SUPER HIGHWAY* tires on drive and trailer wheels. *Northern* have run Store Doors as high as 103,000 miles and based on present performance expect similar mileage from their Super Highways.

Nylon shock shield tires again run over 100,000 miles!

A typical example of B. F. Goodrich improvement in tires

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But the main reason for BFG record-making mileage is the popular nylon shock shield, built into all B. F. Goodrich truck tires with 8 or more plies.

Nylon shock shields are built in between the tread rubber and the body plies. Under impact, the strong, elastic nylon cords stretch *together*. Shock is distributed and absorbed, not confined to one area. The rayon cord body is shielded. Result—tire costs reduced because (1) greater average mileage (2) less danger of tread separation (3) greater bruise resistance (4) more recappable tires.

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TRANSPORT SPARK PLUGS

Conference Corner

Continued from Page 6

may increase the difficulty of lubrication and may be the cause of excessive friction drag, even if not causing excessive wear on the cylinder walls.

The minimum number of compression rings, on the other hand, may reduce friction drag but because the smaller number of rings may be expected to require greater wall pressure, they may paradoxically result in more cylinder bore wear as well as shorter life of the rings and pistons themselves. The number of compression rings, therefore, represents a well-considered compromise and in present-day heavy-duty truck and bus engines, with the higher outputs and increased efficiency demanded, this compromise seems to result in the prevalence of three compression rings.

Unquestionably, improved ring designs, materials and surface treatments have resulted in the possibility of securing satisfactory results with fewer rings than where less highly-developed types are used; but there is a limit to how much simplicity is possible in this direction. Engines which are subject to extreme bore distortion naturally require a greater number of rings than those whose bores possess greater dimensional stability.

Operating Conditions, Type of Engine, Ring Design Determine Requirements

by H. R. Steding, Dir. of Technical Data
Chrysler Corporation Eng. Div.

As you know, this is a highly complex subject. The proper number and design of piston rings used in any given engine can only be determined through extensive testing, and it is very difficult to make broad generalizations which apply to all engines.

Generally speaking, however, it can be said that a reduction in the number of piston rings has some advantages. Fewer rings are desirable from the standpoint of initial cost and reduced friction; and in new engine design, the possibility of using a smaller number of rings assists in the problem of achieving greater compactness.

These advantages are not always easily obtainable. The lubrication characteristics of various engine types differ so widely that the proper number of piston rings for satisfactory engine operation may be different in each case. The operating conditions, the type of engine, and the piston ring design all have an effect in determining the number of rings which must be used to attain satisfactory piston ring performance.

For our passenger car engines, two compression rings and two oil rings give an excellent compromise between good cylinder wall lubrication, adequate compression, minimum wear, and low oil consumption. This number is equally applicable to our truck engines. In diesel engines, the higher temperatures and compression pressures generally necessitate the use of a greater number of compression rings.

Where engine height is considered to be the prime objective, the alteration in piston and connecting rod height also has an effect on the number of rings. To reduce engine height, the space above the piston pin might be reduced and the connecting rod shortened. This requires relieving the piston skirt to allow clearance for the crankshaft counterweight, thus eliminating the possibility of using a skirt ring. This is an example of an occasion where the number of rings might be reduced to attain a lower engine height.

Since the empirical method offers the only means for determining the proper number and design of piston rings, we carry on an extensive program of continuous testing and development on our passenger car and truck engines to achieve the most suitable design and number of rings for satisfactory performance, high economy, and long engine life. In all cases, however, the number of piston rings used results from a compromise which depends almost entirely on the operation, type of engine, and piston ring design.

Cooling, Wear, Scuffing, Oil and Gas Control Must be Considered

by L. L. Bower, Chief Engineer
Waukesha Motor Co.

We believe it is quite common practice, and also followed by ourselves, to use at least five (5) rings on diesel engine pistons. Generally the fifth ring is near the bottom of the skirt below the pin. The main reason for this seems to be the necessity of holding compression and explosion pressures, which are higher than in comparable size gasoline engines. Also, with oil cooling of pistons, which is used by some engine manufacturers, there is more oil on the cylinder and piston walls and therefore rings for better oil control are required to give good oil consumption.

Pistons rings are used to accomplish two main purposes: hold compression pressure on the compression stroke and explosion pressure on the firing stroke, and second, control the oil to admit enough for lubrication of the cylinder walls and piston skirts up to as close to the top ring as possible with the least amount of oil going by the top ring to be burned and without running too dry to cause scuffing or too wet to produce excessive oil consumption. In this matter of oil control it is the writer's opinion that piston skirt clearance and piston skirt contour have a lot to do with the final oil control accomplished. In other words the closer the pistons can be fitted and not seize under operating conditions, the less oil film there will be to reach the piston rings, thereby reducing the oil load on the rings as compared with a loosely fitted piston.

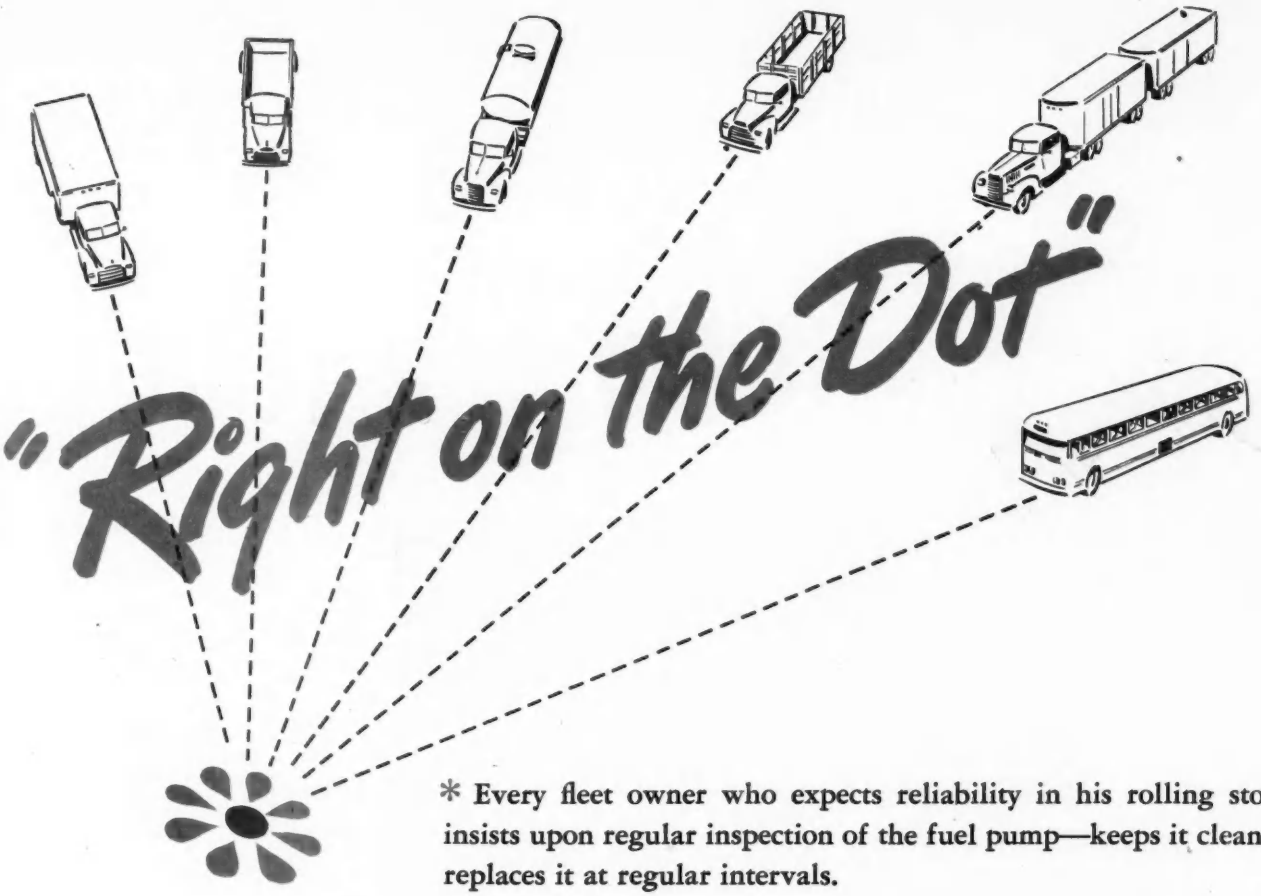
There have been a lot of discussions on the advantages of tapered face compression rings and no doubt you are getting stories on these from the piston ring manufacturers who claim that this type of ring is definitely beneficial in controlling oil, while still acting as a compression ring. In other words, the lower sharper edge, due to the taper, tends to wipe down more oil which reaches the top ring.

You will also find a lot of special rings have been developed during the last few years of the thin steel construction. These conform more evenly to slight irregularities in the cylinder barrel, also give longer wear, since they are steel, and give a more uniform oil control after they are worn in because of the area of the wiping face.

You will also find rings made of special alloy irons with higher wall tension, which are desirable up to the point where they may aggravate cylinder wear or scuffing.

You will also find quite a few variations in oil control rings. As the speed of engines increases, which has been the trend both in passenger car and industrial engines during the past number of years, rings for more severe oil control are required, as the oil consumption does increase with speed.

There is also the problem of chromium plated top rings, which seem to be desirable to decrease cylinder wear by preventing some dirt which may get through an air cleaner going by the top ring which is chromium plated.



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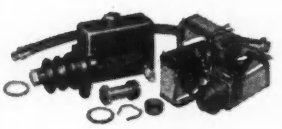

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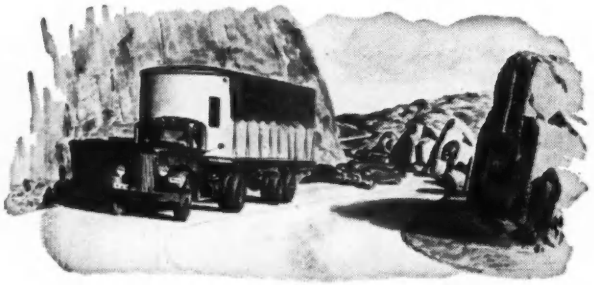
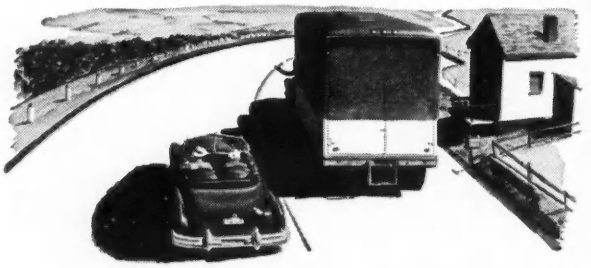
BE A CHAMPION DRIVER

COOPERATE WITH THE WORLD'S SAFEST DRIVERS — THE CROSS-COUNTRY TRUCKERS

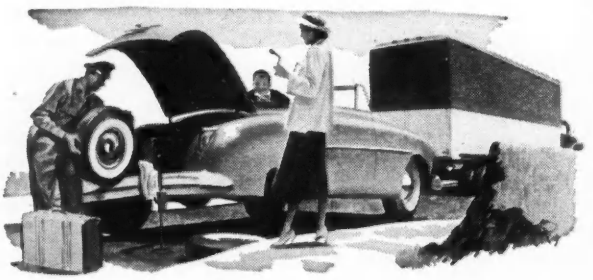


When you're not certain that it's safe to pass a truck, give him a couple of short "toots" or blink lights at night. *Stay back.* He'll signal you—when it's safe to pass!



If you start by a truck and the driver waves you back, he's warning you that there's danger ahead! Stay behind until he signals that all is clear. That's the safe way!

If you are driving slowly and a truck passes *you*, flick your lights as soon as the rear end is clear of your car. This signal, picked up in his right-hand mirror, tells the driver that he can turn back into the right lane. He'll appreciate this courtesy.



Whenever you are *obviously* in distress on the road, you'll find the cross country trucker will be the first to offer you expert help. You can repay this courtesy by always cooperating with him and making his job safer. Be a champion driver! It pays!

Commercial truckers constantly make comparative tests of spark plugs because they know that good spark plugs maintain engine efficiency, economy and dependability. The fact that the vast majority use dependable Champion Spark Plugs is positive proof that you can save money with Champions in your car.

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Demand

Mr. Jess L. Osburn, Houston Transit Company's superintendent of equipment, writes: "*We use dependable Champions exclusively. They helped us win the 1948 National 'Bus* Transportation *Maintenance Award' in the 501 to 750 bus group.*"

AMERICA'S FAVORITE
CHAMPION
SPARK PLUGS

Listen to the CHAMPION ROLL CALL . . . every Friday night, over ABC network . . . CHAMPION SPARK PLUG COMPANY, TOLEDO 1, OHIO

SERVICE NOTES

Briefed for Fleets From Manufacturers' Bulletins

Chevrolet

Heavy Duty Steering Knuckle

A change has been made to provide additional strength in the steering knuckle of the heavy duty front axle as used on the 1½ ton school bus, all 2 ton truck models, and on other models where the heavy duty front axle is used as optional equipment.

The additional strength in the steering knuckle was provided for by increasing the diameter of the spindle. Included in the parts list below are the other parts that are necessarily changed because of the change in the steering knuckle:

Description	*Part Number*
Steering Knuckle and Bushing with Nut	3693435
Flange Plate	3691427
Front Hub Inner Oil Deflector	3691428
Inner Bearing Packing Retainer	3691478
Roller Bearing Assembly	7450034
Roller Bearing Assembly	7450131

The new steering knuckle may be installed on trucks already in service; however, should this change be desired it would be necessary to replace all the parts listed in the above table.

Fuel Pump Pressures

Some complaints have been received from the field advising that high fuel pump pressures have been experienced on 1949 passenger cars and trucks resulting in claims that this condition is contributing to high fuel consumption.

It is very unlikely that reported high fuel pump pressures have any effect whatsoever on reported high fuel consumption.

Fuel pump pressures are specified as follows:

Standard Fuel Pump ..... 3 to 4 lb.
R.P.O. Fuel and Vacuum Booster Pump ..... 3½ to 4½ lb.

Reports have indicated that dealer service personnel in many instances have placed an extra gasket between the fuel pump flange and the cylinder block in an effort to correct this suspected high fuel pump pressure.

This practice will result in starving the carburetor at high speeds as it will restrict the stroke of the fuel pump rocker arm and in turn restrict the stroke of the diaphragm, requiring extra strokes to develop the same volume of fuel to the carburetor. It will have no effect whatsoever on fuel pump pressure as this is controlled entirely by the diaphragm spring located under the fuel pump diaphragm.

FWD

Adjustments for Push Type Clutches

Former Type	Assembly with Plain Sleeve	Assembly * with Equalizer Sleeve	Inch Size	Dimension "A"	Qty. of Shims
3D–Z30–S	3D–130–1–227	3D–130–1–320	13	1 in.	6
3D–Z31–S	3D–140–1–026	3D–140–1–308	14	1¼ in.	6
3D–Z32–S	3D–140–1–027	3D–140–1–293	14	1 1/16 in.	6
3D–Z34–S	3D–120–1–030	3D–120–1–300	12	1 1/16 in.	4
3D–Z37–S	3D–130–2–096	3D–130–2–330	13–2	1⅛ in.	8
3D–Z38–S	3D–150–2–177	3D–150–2–322	15–2	1⅛ in.	8
3D–Z40–S	3D–150–1–149	3D–150–1–301	15	1⅛ in.	7
3D–Z40–SX	3D–150–1–150	3D–150–1–317	15	1⅛ in.	7
3D–Z42–S	3D–150–1–146	3D–150–1–295	15	1⅛ in.	7
3D–Z42–SX	3D–150–1–148	3D–150–1–316	15	1⅛ in.	7
3D–Z54–H	3D–140–2–181	3D–140–2–327	14–2	1⅛ in.	8

* These clutches contain the new equalizer type release sleeve which holds the sleeve in a more horizontal position with the release bearing. These are used in our present production. This equalizer type sleeve can be used in making replacement of the old type.

3D-C4-29 equalizer sleeve with 3D-C371 equalizer ring replaces plain sleeve 3D-C4-26.

3D-C4-28 equalizer sleeve with 3T-C37-2 equalizer ring replaces plain sleeve 3D-C4-25.

Dimension "A" refers to the distance from machined surface which supports the shims to face of clutch sleeve, against which the release bearing acts. The dimension "A" on clutches with the equalizer sleeve should be increased 1/16 inch. This also applies to the clutch adjustment when the plain type release sleeve is replaced with the equalizer type release sleeve.

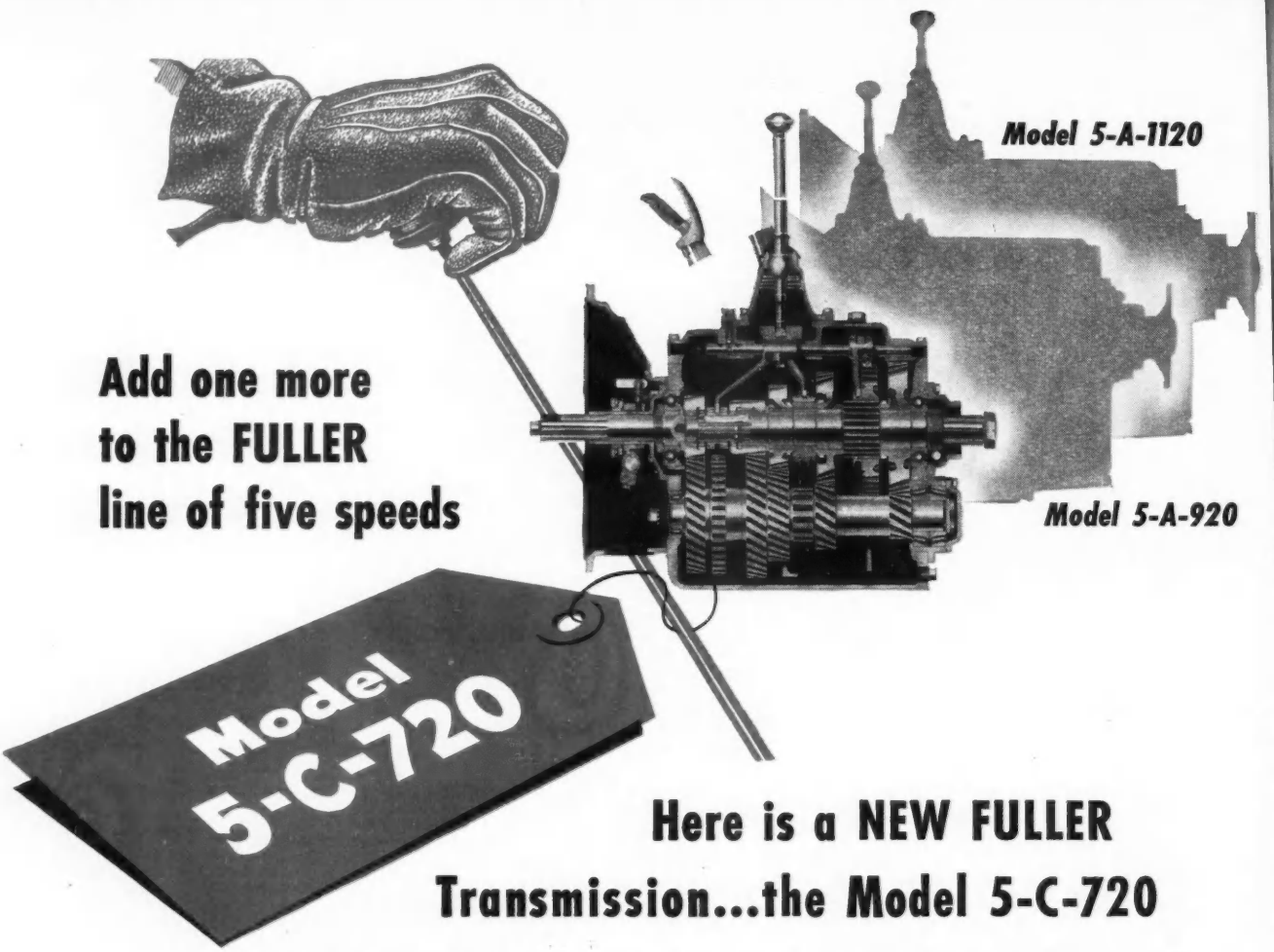
Federal

"DPH" Brake Springs

Since the introduction of the "DPH" brake, the tension specification of the shoe return spring has been changed and, in most cases, the same part number has been retained. Field identification can be made by the color of the springs. On dust shield mounted brakes the original spring, 11B5124, is painted black, while later ones are dark blue and light blue in the order of increasing tension.

When servicing "DPH" brakes, the original (black) spring should be replaced with one having greater tension. In cases where trouble is experienced with the blue springs failing to retract the shoes and it is definitely established that more

(TURN TO PAGE 18, PLEASE)



Add one more to the FULLER line of five speeds

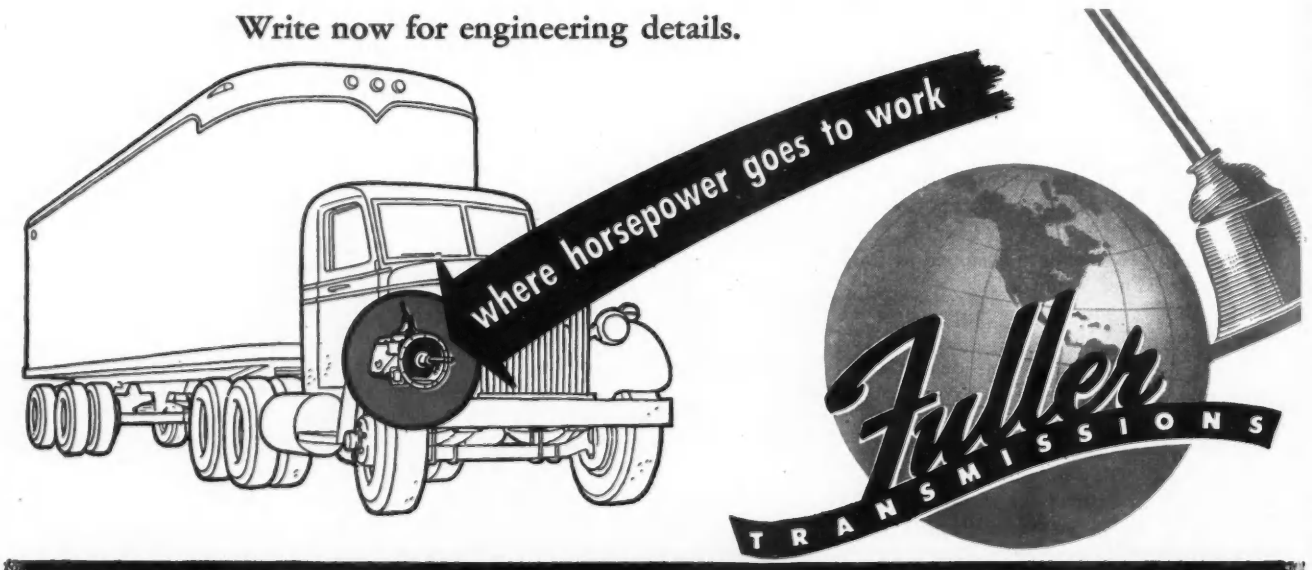
Here is a NEW FULLER Transmission...the Model 5-C-720

Third of the all-helical geared five-speed Fuller Transmissions, Model 5-C-720 completes the line of heavy-duty units designed to cover a range of engines developing 150 to 300 hp.

All-helical gearing permits compact design, and:

- ***Shorter, easier shifts***
- ***Quiet operation***
- ***Longer life***
- ***Low weight—high capacity***

Write now for engineering details.



FULLER MANUFACTURING COMPANY (Transmission Division), KALAMAZOO 13F, MICHIGAN

Unit Drop Forge Division, Milwaukee 1, Wis. • WESTERN DISTRICT OFFICE (SALES & SERVICE—BOTH DIVISIONS), 1060 E. 11th Street, Oakland 6, Calif.

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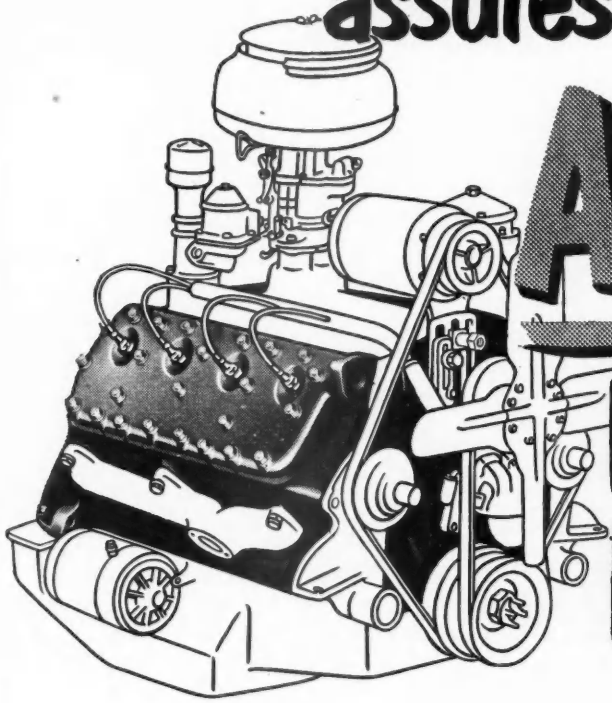
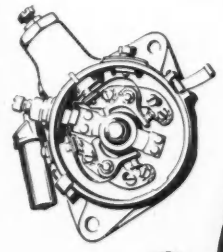
This New Symbol assures

RECONDITIONED by authorized Reconditioner

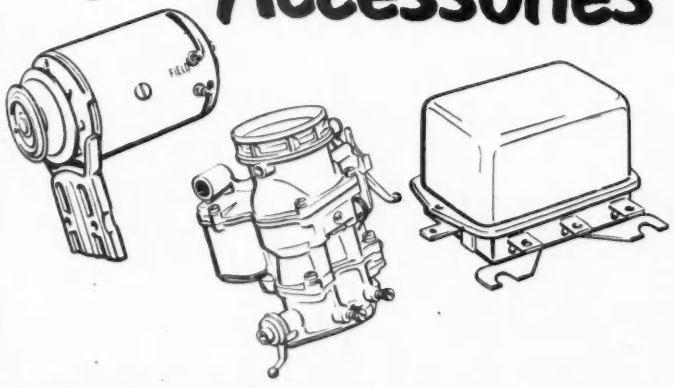
Ford Ford

Authorized Reconditioned Ford Engines





and Engine Accessories



HERE is the symbol of quality assurance in the reconditioned engine and engine accessory field . . . the new AUTHORIZED Reconditioned Ford Engine and Engine Accessory emblem that appears on units processed by *authorized Ford* reconditioners.

Here is assurance that the engine and engine accessories have been reconditioned according to Ford's famed hi-precision standards. Here is assurance that only Genuine Ford Parts have been used. And here is assurance that all units have been rigidly tested by *authorized Ford* reconditioners.

Fifty-eight reconditioners, strategically located across the country for fast delivery service, have been selected to use this great emblem.

Now, the question mark has been taken out of repowering for Ford owners. When the time comes to repower your Ford equipment, you'll save time and money with *Authorized* Reconditioned Ford Engines and Engine Accessories.

At Ford Dealers and selected independent garages

FORD Division of FORD MOTOR COMPANY

SERVICE NOTES

Briefed for Fleets From Manufacturers' Bulletins

Continued from Page 15

tension is required, then install spring, 11A6115 (green).

In addition to the above, a yellow spring, 11A6004, of increased tension is supplied for spider mounted "DPH" brakes. (4-in. and 5-in. width only.)

Federal

Water Pump—T6371 and T6427 Engines

Effective in production with engine T6371 No. 1529 and T6427 No. 3161, the water pump shaft at the impeller end has been increased in diameter. This change makes it necessary to replace shaft, bushing, impeller and seal assembly. Inspect shaft ball bearings and replace if any indication of wear exists. Small size shafts and impellers will not be supplied after present stock is exhausted and all pumps which require either of the above parts will then have to be reworked to the new style.

IHC

Oil Filter Return Line

Fouling of number 4 and 5 spark plugs on the K-1-M, KB-1-M, K-3-M, KB-3-M models may be attributed to the location of the oil return hole in the oil filter return line and valve cover capscrew. If the oil return hole in the capscrew is not in a perpendicular position, it is possible that too much oil is being sprayed directly on the valve springs causing the above condition.

Upon making installation of this type capscrew, the head of the capscrew should be marked so as to locate the perpendicular position of the oil return hole after assembly. It should be installed between two exhaust valves. The proper location for installing the oil filter return line capscrew is in the front hole of the rear valve cover.

Gasket Change

To prevent coolant seepage and leakage on the GRD engines, ferrules have been added to all the coolant passage holes in the cylinder head gasket.

With engines in service where coolant seepage and leakage is experienced, it is recommended the old gasket be removed and the gasket having ferrules around the coolant passage holes installed.

Camshaft and Crankshaft Gears Matched Sets of Gears

FBB, FBC, RED ENGINES—To assure quietness in operation and longer life camshaft and crankshaft gears (timing gears) which have been matched at the factory will be supplied as "Matched Sets" for service requirements replacing the individual "Non-Matched" gears now being supplied for servicing the above engines.

Plymouth

Clutch Spring Washer

Spring washers and plain washers are now being assembled in the clutch linkage in addition to the plain washer previously used. The spring washer takes up looseness in the clutch linkage and prevents a knocking or rattling noise that may seem to originate in the engine or clutch on acceleration. *These parts should be installed before attempting any major repairs on these units to eliminate this type of noise.*

In addition, installation of these parts will also eliminate a buzz or rattle usually heard on deceleration from 45 to 35 M.P.H.

Oil Pressure Relief Valve

An improved Oil Pressure Relief Valve has been incorporated on current Model P-17 and P-18 Plymouth cars. Slight modifications in machining of the cylinder block were made to accommodate the new type *Oil Pressure Relief Valve Plunger, Part Number 1142998.* This new type plunger can be used on engines built prior to this change.

New Plug Gap

The new gap setting of the resistor type spark plugs has been changed to .035 inch plus or minus .001. On cars where misfiring occurs, the entire set of spark plugs should be sand-blasted and reset to .035 inch. The distributor point gap should be checked, and all high tension snap-in type connectors should be tight. The rubber boot or cap on these wires may sometimes seem snug without the electrical connection being tight, so it is important to see that the connector makes good contact.

Studebaker

Front Suspension Noise

A noise may be encountered in the front suspension of some 1950 Commander models, described as a "clunking" sound, which is traceable to the upper control arm. If such a noise is encountered, test for its location by loosening the front shock absorber on the side of noise origin and road test the car. If the "clunk" disappears during this test, eliminate it permanently by proceeding as follows:

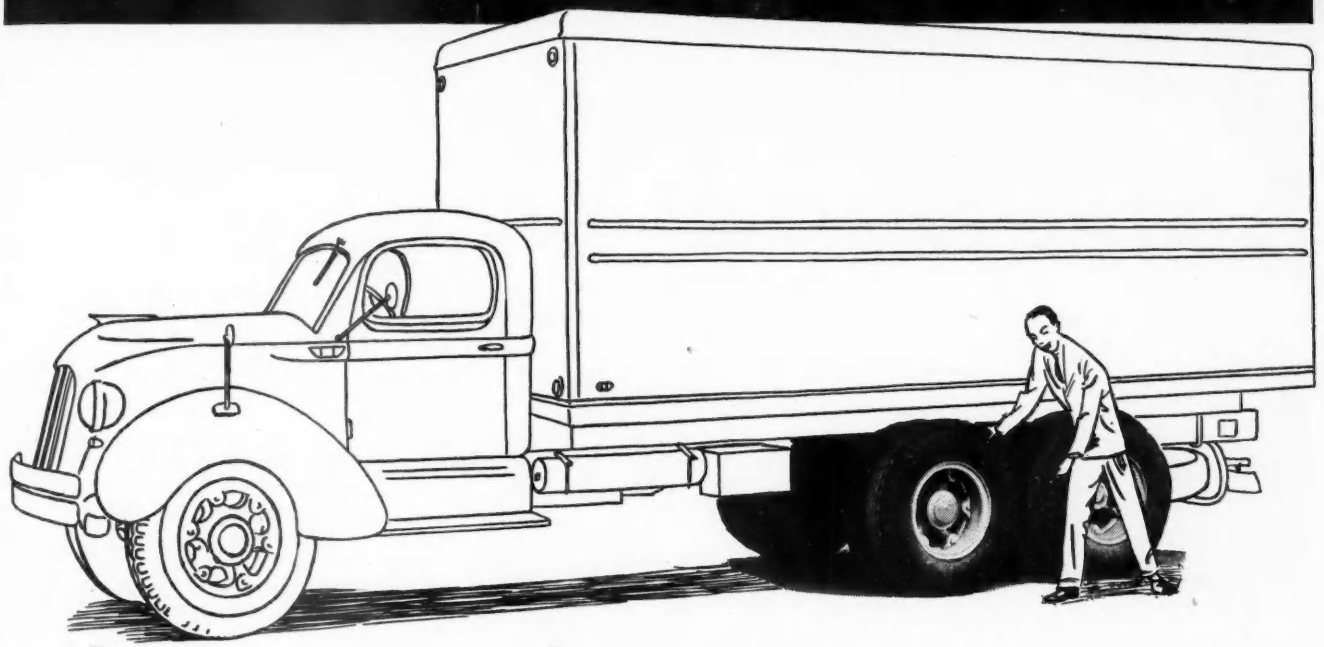
1. Tighten self-threading bushing in the rear end of the upper control arm inner shaft 1/6 turn. Road test car to see if noise has been eliminated.
2. If not eliminated, remove the upper control arm from the car, disassemble the upper control arm inner shaft by removing the self-threading bushing and, with spreader (Tool No. J 3957), spread the inner yoke to a total of .090 in. Assemble the upper control arm and reinstall on car.

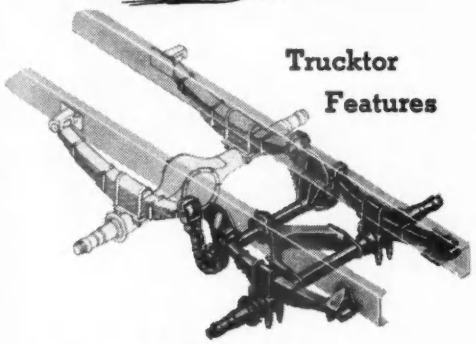
Propeller Shaft Flange Disc for 2R10 (3 Speed Trans.)

A propeller shaft flange disc, Part No. 679705, entered production with truck Serial No. R10-17959. The purpose of this disc is to dampen vibration frequencies that cannot be entirely conrolled by the clutch plate or the propeller shaft support rubber cushions.

When it is necessary to overcome propeller shaft ring, the flange disc, Part No. 679705, can be used in conjunction with the stabilizer clutch plate and propeller shaft support cushions.

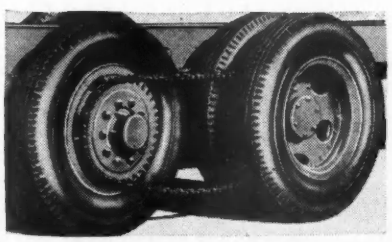
Time to get converted -to 6-WHEELER CONVERSIONS





Trucktor Features

1. Carry up to double the payloads
2. Greater safety
3. Low operating costs
4. Low maintenance costs
5. Low first cost
6. Less dead weight
7. Longer vehicle life
8. Less damage to fragile loads



TRUCKTOR Detachable Chain-and-Sprocket 4-Wheel Drive.

The unusual activity of road officials within recent months in bearing down on truck overloads has caused many truckers to become converted to 6-Wheeler conversions. Single unit 6-wheelers have a strong appeal to cost-conscious fleet operators because they make it legal to haul additional payloads up to as much as 100%; they are more maneuverable and easier to handle on the highway; they are unusually easy riding, protecting payloads and the truck itself from damage due to road shock; they carry less dead weight in proportion to payloads.

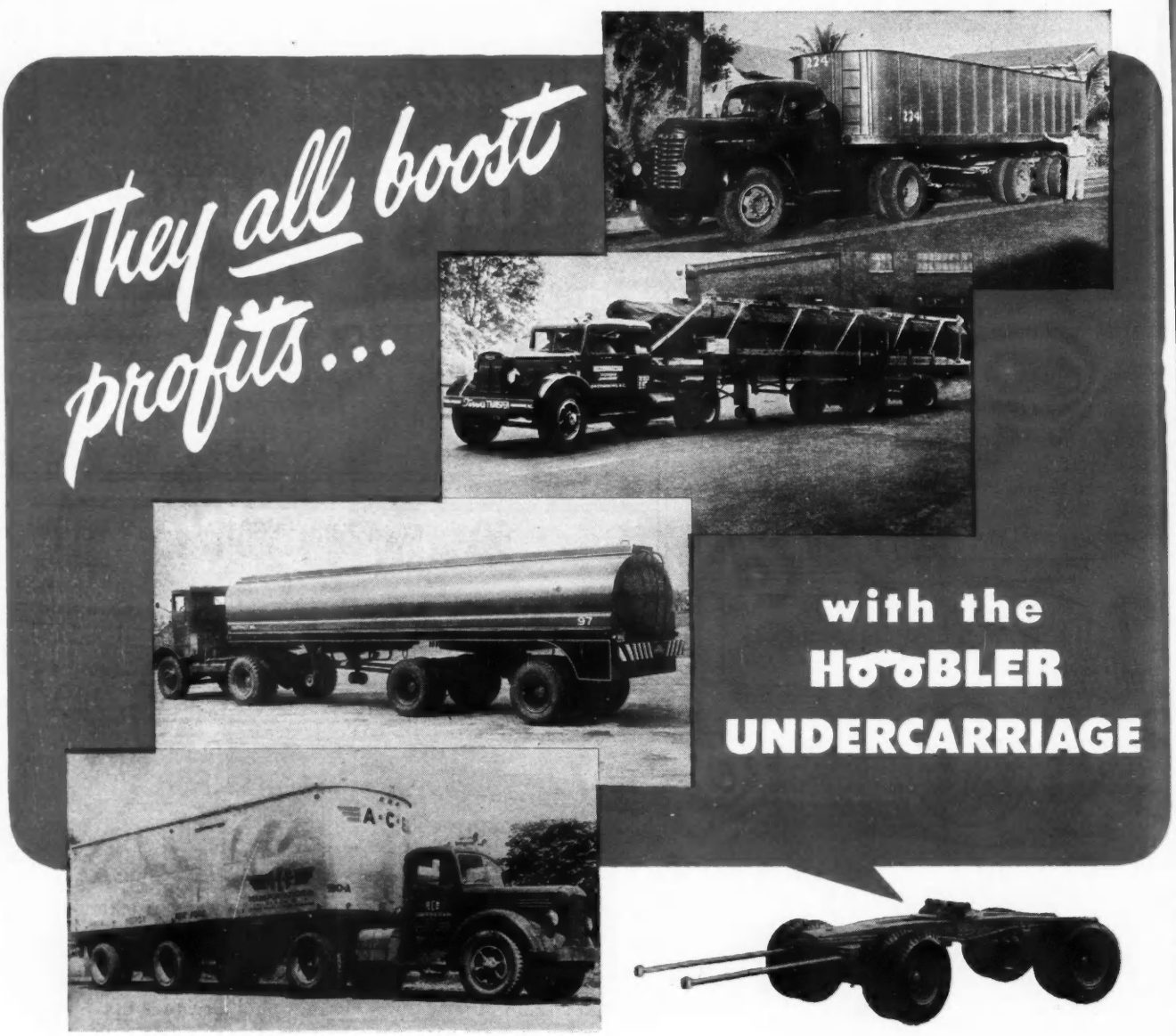
In short, it has been the experience of most fleet operators that the cost of a 6-wheeler conversion can be saved by the reduced operating costs effected over a period of a month or two. Use Trucktored 6-wheeler conversions to increase your profit margin by reducing operating costs and overload penalties. Send for information.

***Safety* IS NO ACCIDENT**

Trucktor AXLES

THE TRUCKTOR CORPORATION 156 Wilson Avenue, Newark 5, N. J.

★ *ALSO MANUFACTURERS OF TRUCKTOR SINGLE AND TANDEM TRAILER AXLES* ★



WHETHER you operate tankers, high-sides, vans or flat tops (28 feet and over), you can reduce operating costs and increase trucking profits with the Hoobler Undercarriage.

HERE'S WHY

The Hoobler Undercarriage allows the trailer to ease around the tightest corners or travel the straightaways, with practically no scuffing of tires.

"Outrigger" action provides greater stability on curves. Flexible, multiple support absorbs practically all road bumps. Minimum load shifting, loads ride safer.

Highly important, Hoobler 9-foot axle spacing generally permits greater payloads.

Simple in design and construction, quickly inspected, easily serviced, the Hoobler Undercarriage can help *you* make savings every mile, every day, just as it does for users across the country.

For complete information, write The Union Metal Manufacturing Company, Canton 5, O.

UNION METAL

DESIGNERS AND PRODUCERS OF STEEL PRODUCTS SINCE 1906

Builder of The Hoobler Undercarriage

Want super-traction plus super-mileage?

Now for the first time you can buy and specify *one* tire that combines super-safety with super-mileage — it's Goodyear's new Hi-Miler XTRA TRED!

Actual tests prove that the new Hi-Miler XTRA TRED gives you up to 60% more traction —up to 50% more mileage than other heavy-duty truck tires.

Super-traction, because the new Hi-Miler XTRA TRED has a flatter tread with zigzag grooves and notches to provide more and better road-gripping edges.

Super-mileage, because the new Hi-Miler XTRA TRED has as much as 50% deeper non-skid tread. Combining greater tread depth and flatter tread contour provides longer wear, better mileage, more puncture protection, extra value.

For slippery weather give your trucks better traction with Goodyear's new Hi-Miler XTRA TRED — available in either rayon cord or super-durable, heat-resistant nylon.

Ask your Goodyear dealer now for the new truck tire that gives you up to 60% more traction — 50% more mileage — Goodyear's new Hi-Miler XTRA TRED. Remember, always BUY and SPECIFY Goodyear — *pays!*

THE HI-MILER ALL-WEATHER

For hauls where experience indicates that extra-tread tires should not be used, the Hi-Miler All-Weather is your best bet. A tough-traction tire with the world-famous Goodyear diamond tread. This time-proved non-skid design provides real road-gripping protection in slippery going.

THE ROAD LUG

Originally engineered for on- and off-the-road service, now a big favorite with many operators on regular highway hauls because it has deep non-skid tread for long wear — resistance to cutting and snagging — alternate long and short bars that dig in for traction.

We think you'll like "THE GREATEST STORY EVER TOLD"—Every Sunday—ABC Network

GOODYEAR

Hi-Miler, Xtra Tred, All-Weather, Road Lug—T.M.'s The Goodyear Tire & Rubber Company

MORE TONS ARE HAULED ON GOODYEAR TIRES THAN ON ANY OTHER KIND

The OVERLOAD

EDITORIAL COMMENT

Is the Industry Still Hiding Its Lights Under Bushels?

WHILE the truck industry has been remarkably and laudably restrained in answering the vicious attacks aimed at it by the railroads, it seems to us that the industry has been missing a bet for direct action. All too often its advertising and propaganda (what a nasty word) still stem from an inherent and natural desire to counter the rail attacks with facts about taxes paid and with discussions about damage to the highways and the necessity of trucks in the American way of living.

Even though these arguments are well-founded, they are nonetheless hard for old Joe Public to understand. When he gets stuck behind a "boxcar" on the highway that he regards as his own special bailiwick, he still thinks the truck is too big, too slow, that its busting up his highway, that in short "there oughter be a law." He remembers more of the rail arguments than the truck arguments simply because he sees and hears more of them—in his newspapers and magazines and over his radio.

* * *

Instead of using up limited truck publicity funds (both collective and individual) on complicated arguments that run the risk of missing old Joe Public's boat, why not publicize specific, easy-to-understand examples of how trucks are doing a better job—how they save shippers, and ultimately the public, actual cold dollars?

We came across just such a case recently right in our own back yard. A manufacturer and shipper in the Philadelphia area was marketing a goodly part of his merchandise in Detroit. To serve the Detroit market with typical American efficiency he built a substantial warehouse in Detroit, and shipped his goods between factory and warehouse by rail in carload lots. Soon the warehouse, designed with a 50 per cent surplus capacity margin, was busting its seams. How come?

An investigation showed that the average rail shipment (in carload lots, mind you, not LCL) took 15 days for the 600-odd mile run between point of origin and destination. Hence a three-week inventory, valued at $105,000 had to be maintained at the Detroit warehouse. On top of that it was found that arrivals could not be predicted within days, let alone hours necessitating an unbalanced work load at the warehouse. Furthermore, one in every four carloads arrived in damaged condition. Sure, the railroads made good on claims, but there was a still further delay; still further inventory requirements.

So the shipper turned to trucks, not, incidentally, because any truck line sold him on the idea, but because he figured they could do a better job. The rates were almost identical. What happened? Now on a five-day-a-week schedule, common carrier trucks deliver the goods to Detroit on second morning delivery. Inventory, that is flexible to a two or three day requirement, has been reduced to $30,000.

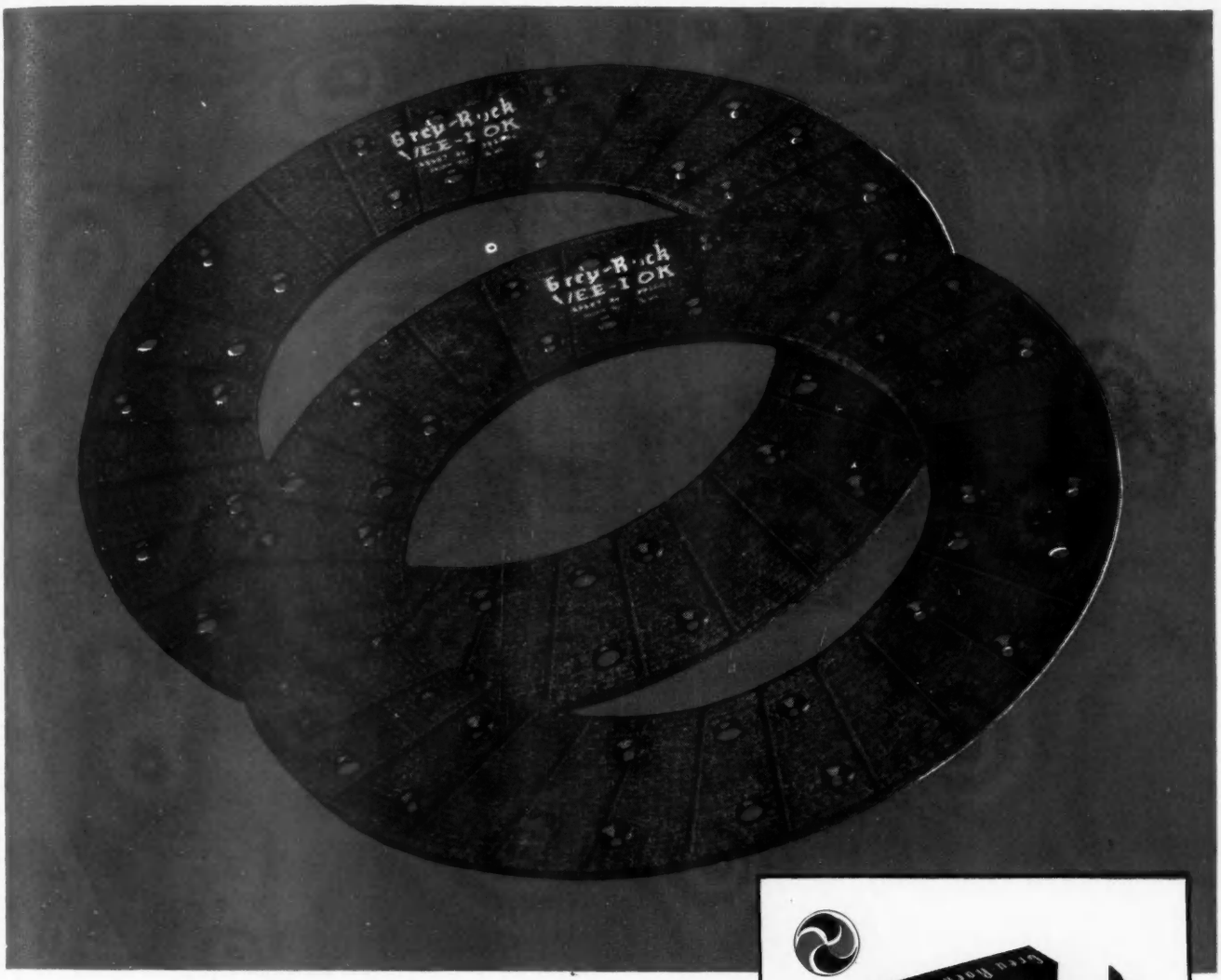
That's an actual cash saving of $75,000, let alone the fact that an addition to the warehouse, at first thought absolutely necessary, was eliminated.

On top of that, the trucks deliver the merchandise in perfect condition. Not once, since the service was instituted, has there been a damage claim. And the trucks arrive each morning, after an easy two-night schedule with lay-over in Cleveland, at exactly 9 o'clock. Special crews are on hand then, and then only, to unload them.

Of course, this example can be multiplied thousands of times in every city and in every vocation. If readers will give us details of similar experiences we will be glad to either publicize them or refer them to the most appropriate national or state association for action. Let us hear from you!

If the public can be sold on the *efficiency* of truck service, then the railroads will have to start putting their own houses in order before they go to the public with gripes about their competition. We're just a little sick of seeing the truck industry goaded by the rails, just because a truck can do a better, faster, more economical job than a freight train. It's time that all members of the truck industry stopped hiding their lights under the bushels of inaction or indifference.

Bart Rawson
Editor



VEE-LOK®...your key to better clutch jobs and lower maintenance costs

When Grey-Rock Vee-Lok Facings are used to reline a clutch . . . *any* type, *any* size . . . you're sure of smooth engagement, plus *extra* miles of service. That's because of the patented, locked-together, endless construction . . . a Vee-Lok exclusive! There are many spiral-wound clutch facings, but only one Vee-Lok. Standardize on Vee-Lok! Your Grey-Rock jobber can supply you. He also carries Grey-Rock Balanced Trucksets, the long-lasting brake linings that deliver smoother, safer stops.

GET IT FROM YOUR JOBBER

Only Grey-Rock has Balanced Trucksets

GREY-ROCK DIVISION of Raybestos-Manhattan, Inc., **Manheim, Pa.**

RAYBESTOS-MANHATTAN, INC., Manufacturers of Brake Linings • Brake Blocks • Clutch Facings • Fan Belts • Radiator Hose • Packings Mechanical Rubber Products • Rubber Covered Equipment • Asbestos Textiles • Powdered Metal Products • Abrasive and Diamond Wheels • Bowling Balls

THE

BIG CHIEF

Joins the MOHAWK TRIBE

Big Chief tires are available in popular large truck sizes, both regular and extra ply construction.

For grueling special service such as excavating, logging or mining—either on or off the road—you just can't beat the extra rugged strength built into Mohawk's new Big Chief tires.

THE MOHAWK RUBBER COMPANY

AKRON 5, OHIO

MOHAWK

"Earn $83,000 *EXTRA REVENUE* Per Year Hauling 13 Million Lbs. Additional Payload!"

Writes Mr. R. L. Dance—President, Dance Freight Lines, Inc., Cincinnati, Ohio

***And here's how Mr. Dance explains the above figures:**

"Each of these new lightweight units hauls a good 2,500 lbs. more payload per trip than its predecessor. If they average only 4 trips a week, that's 10,000 lbs. per TRAILMOBILE —250,000 for all 25 or 13 million lbs. a year. This added payload means a gain of $83,000 revenue for the year and we should do even better than that. We're delighted, too, with our TRAILMOBILE's low operating costs and exceptionally easy handling. The latter is especially important to us as we operate almost entirely in very hilly country."

Exceptional? On the contrary, it's what you should expect when you switch to the ALL-ALUMINUM TRAILMOBILE. You'll see why this is true when you know the whole TRAILMOBILE story. Just mail the coupon.

THE TRAILMOBILE COMPANY

Cincinnati 9, Ohio • Berkeley 2, California

MAIL THIS COUPON NOW!

THE TRAILMOBILE CO., 31st and Robertson, Cincinnati 9, Ohio
Please rush me complete descriptive information on the new lightweight TRAILMOBILE.

Name.....
Business.....
Business Address.....
City.....*State*.....
My Position.....

Va. GOES AFTER t.b.

The truck bodies are divided into two rooms, a dark room and an X-ray room. Operated by two men, this unit will handle up to 800 persons per day.

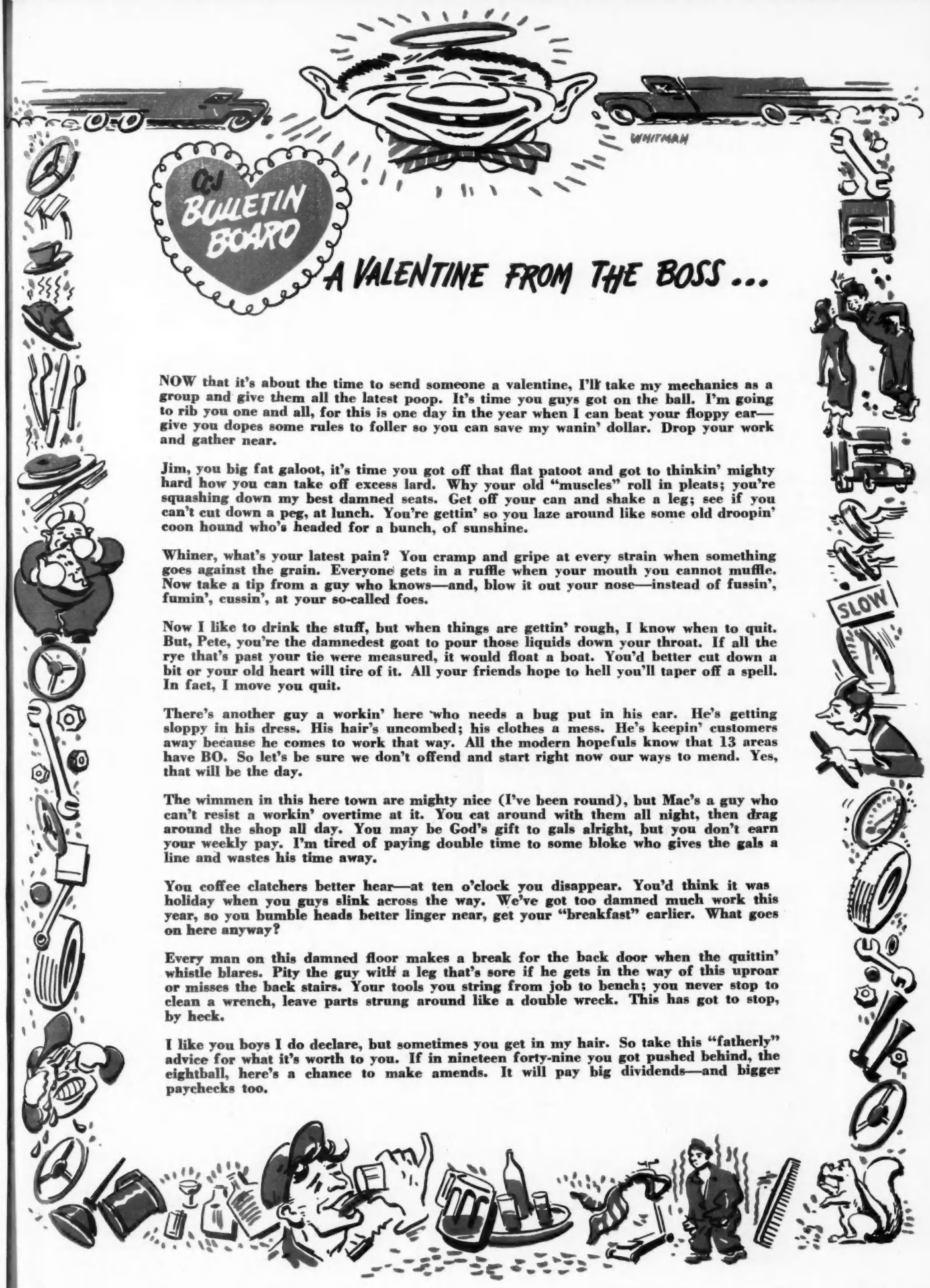
The Autocar line is varied enough to permit any buyer with a special problem to specify an Autocar built virtually to his individual needs. The Health Department of the Commonwealth of Virginia needed trucks with roominess—space to install a lot of delicate X-ray equipment without crowding.

Here was Autocar's answer: a U-50 chassis with 193" wheelbase, where the engine and cab are compressed into the least possible space. Yet, like every Autocar, this and the four others in Virginia's t.b. fighting fleet have the optimum balance between strength and power. And that's what every truck buyer wants who has an eye to performance combined with low maintenance. When buying trucks it pays to buy Autocars—product of a maker of trucks only.

AUTOCAR TRUCKS

They cost less, because they do more work

The Autocar Company, Ardmore, Pa.
Established 1897
Factory Branches and Distributors
from Coast to Coast



A VALENTINE FROM THE BOSS...

NOW that it's about the time to send someone a valentine, I'll take my mechanics as a group and give them all the latest poop. It's time you guys got on the ball. I'm going to rib you one and all, for this is one day in the year when I can beat your floppy ear—give you dopes some rules to foller so you can save my wanin' dollar. Drop your work and gather near.

Jim, you big fat galoot, it's time you got off that flat patoot and got to thinkin' mighty hard how you can take off excess lard. Why your old "muscles" roll in pleats; you're squashing down my best damned seats. Get off your can and shake a leg; see if you can't cut down a peg, at lunch. You're gettin' so you laze around like some old droopin' coon hound who's headed for a bunch, of sunshine.

Whiner, what's your latest pain? You cramp and gripe at every strain when something goes against the grain. Everyone gets in a ruffle when your mouth you cannot muffle. Now take a tip from a guy who knows—and, blow it out your nose—instead of fussin', fumin', cussin', at your so-called foes.

Now I like to drink the stuff, but when things are gettin' rough, I know when to quit. But, Pete, you're the damnedest goat to pour those liquids down your throat. If all the rye that's past your tie were measured, it would float a boat. You'd better cut down a bit or your old heart will tire of it. All your friends hope to hell you'll taper off a spell. In fact, I move you quit.

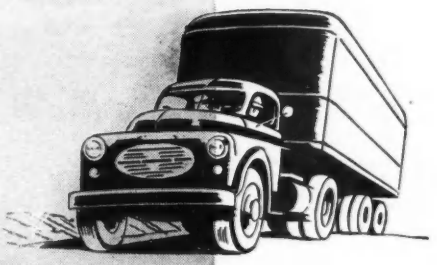
There's another guy a workin' here who needs a bug put in his ear. He's getting sloppy in his dress. His hair's uncombed; his clothes a mess. He's keepin' customers away because he comes to work that way. All the modern hopefuls know that 13 areas have BO. So let's be sure we don't offend and start right now our ways to mend. Yes, that will be the day.

The wimmen in this here town are mighty nice (I've been round), but Mac's a guy who can't resist a workin' overtime at it. You cat around with them all night, then drag around the shop all day. You may be God's gift to gals alright, but you don't earn your weekly pay. I'm tired of paying double time to some bloke who gives the gals a line and wastes his time away.

You coffee clatchers better hear—at ten o'clock you disappear. You'd think it was holiday when you guys slink across the way. We've got too damned much work this year, so you bumble heads better linger near, get your "breakfast" earlier. What goes on here anyway?

Every man on this damned floor makes a break for the back door when the quittin' whistle blares. Pity the guy with a leg that's sore if he gets in the way of this uproar or misses the back stairs. Your tools you string from job to bench; you never stop to clean a wrench, leave parts strung around like a double wreck. This has got to stop, by heck.

I like you boys I do declare, but sometimes you get in my hair. So take this "fatherly" advice for what it's worth to you. If in nineteen forty-nine you got pushed behind, the eightball, here's a chance to make amends. It will pay big dividends—and bigger paychecks too.



When Performance

Cannot be Compromised . . .

Zenith

is the Engineers' Choice!

Anyone who builds or operates heavy-duty trucks knows what it takes to master the really tough jobs—it takes performance of uncompromised quality. That is why engineers insist on Zenith for heavy-duty carburetion —for they know that *only* Zenith is specifically designed to do these jobs. For the best operation of *your* heavy-duty equipment, there can be only one answer—Zenith—the engineers' choice for rugged performance.

ZENITH CARBURETOR DIVISION OF
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AVIATION CORPORATION

MANUFACTURERS OF FINE CARBURETORS AND FUEL FILTERS

NEW PERFORMANCE · NEW DEPENDABILITY · NEW SAFETY

... they're all yours in the

NEW DELUXE

WALKER "Series 900"

PORTABLE HYDRAULIC

JACKS

with the new projectile tank

8 MODELS
1½ to 50
tons
capacity

● Few products in the field of hydraulic lifting equipment have so fine a background of performance, dependability, and safety as the new Deluxe Walker "Series 900" Portable Hydraulic Jacks. Backed by years of careful, constantly refining engineering, they have a continuing approach to true perfection. Years of manufacturing "Know-How" . . . precision production . . . inherent fine quality have been compressed into these fine hydraulic jacks.

The new "Projectile" tank—designed in the shape of a heavy armor piercing shell—withstands greater shock . . . distributes the weight of the load more evenly, more completely to the heavy base . . . resists damage from eccentric loading which every jack is subject to.

But the "Projectile" tank is not the only new feature that distinguishes the new Deluxe "Series 900." Cup leathers have been redesigned and improved . . . new tolerances and "quality controls" assure more positive packing . . . and in models of 5-ton capacity or more, the revolutionary new Walker "I. S. D." power cylinder assures longer service and finer performance.

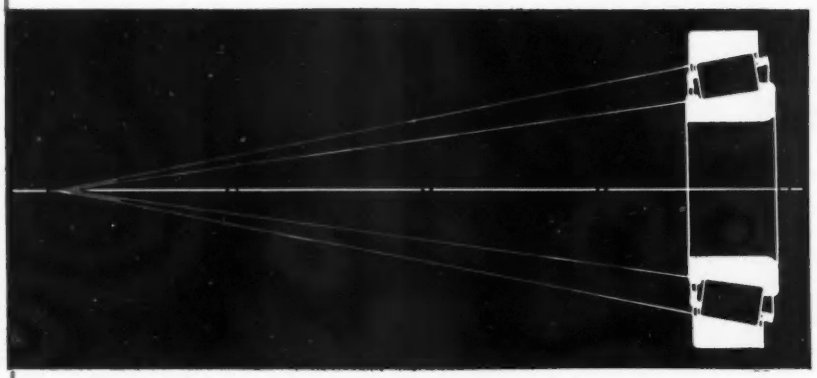
• • •

Yes, these are great jacks — great not only in their finer precision manufacture, their rugged "can-take-it" construction, their smooth dependable operation—but great because the combination of all these outstanding characteristics create a dollar-for-dollar value that cannot be duplicated.

WALKER MANUFACTURING CO. OF WISCONSIN • RACINE, WISCONSIN

Walker Jacks, Lifts, Silencers, and Oil Filters

WALKER *leads in* JACKS



True rolling motion

The rollers in Timken® bearings really roll. That's because rollers and races are precisely tapered so that all lines coincident with their tapered surfaces always meet at a common point on the axis of the bearing.

This true rolling motion results in friction-free operation and minimum wear—helps hold precision longer. It's another reason why Timken tapered roller bearings are first choice with truck and trailer manufacturers everywhere.

Another reason why TIMKEN® bearings are first choice with truck manufacturers

SINCE THEY'RE BEST WHEN THE TRUCK IS NEW ....THEY'RE BEST FOR REPLACEMENT, TOO!

YOU'RE SURE of long, trouble-free service when you use Timken bearings for replacement. Only tapered roller bearings stamped with the trade-mark "Timken" give you: 1) advanced design, 2) precision manufacture, 3) rigid quality control, 4) special analysis steels. FREE BOOKLET, "*Timken Tapered Roller Bearings, Their Care and Maintenance*", contains 20 pages of practical tips for fleet owners and mechanics. For your copy, write Dept. JC-2 The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

TIMKEN

TRADE MARK REG. U. S. PAT. OFF.

TAPERED ROLLER BEARINGS

NOT JUST A BALL ◯ NOT JUST A ROLLER ⬭ THE TIMKEN TAPERED ROLLER ⬭ BEARING TAKES RADIAL ◎ AND THRUST ⟷◎⟷ LOADS OR ANY COMBINATION ✳

Above: Eight of the 17 trucks operated by the Barnes Brothers, Pipestone, Minnesota.
Right: Roy Barnes, Leo Nesius of Standard Oil, Harry Barnes.

How they *DOUBLED MILEAGE* between overhauls . . .

● When ring sticking and sludge troubles began whittling down mileage between overhauls, the Barnes Brothers of Pipestone, Minnesota, turned to a Standard Oil Automotive Engineer for help. At his suggestion, two bad actors in the fleet of 17 trucks were switched to STANOLUBE HD Motor Oil.

Stanolube HD Motor Oil

After three months of operation on STANOLUBE HD, the two engines were inspected. *There was no sludge. Rings were free.*

STANOLUBE HD is now used throughout the Barnes Fleet. Ring sticking and sludge troubles have been completely eliminated. An effective preventive maintenance program has been set up by Roy Barnes, equipment superintendent, with the help of the Standard Engineer. The over-all result: Barnes trucks, today, go twice as far between overhauls.

Whether you have a particular lubrication problem or are simply looking for greater fleet economy, a Standard Oil Automotive Engineer can help you. He offers you the finest automotive fuels and lubricants on the market. He has the practical experience and specialized training to help you obtain the maximum benefits from these products. Arrange for his visit, now, by writing to: Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

STANDARD OIL COMPANY (INDIANA) STANDARD

free PUBLICATIONS

A selected list of the latest literature — catalogs, pamphlets, charts—chosen to help fleetmen improve operation and maintenance.

L6. Piston Ring Catalog

A new 177-page Ramco Piston Ring Catalog No. 94, especially designed for quick, easy, "single-reference" use, contains 165 pages of specifications and is said to give 19 per cent more complete coverage than previous listings. A total of 8337 piston ring applications are listed for automotive engines, motorcycles, motor bikes, scooters, stationary engines, outboard motors and air compressors. 1337 of these are new applications, including listings for most late-model cars and trucks. Complete specifications are given for each listing. It contains complete indexes for quick orientation and is so set up that only a single reference is required in most cases.

Write L6 on the free postcard for a copy.

L7. Truck Cost Log

The 28th annual edition of a record book, designed to take the guesswork out of truck-operation costs, has been brought out by the Autocar Co. Thus fleetmen with heavy-duty equipment can keep a quick, accurate and simple day-by-day check throughout the year on performance and expense.

The book is made up of 12-double-page cost sheets, one for each month of the year. The record can be started any time of the year, for of the 12 months printed along the edge of each double sheet all but the month wished can be clipped away.

Each sheet provides space for a truck's daily record of miles traveled, trips, units (tons, gallons, etc.) carried, unit miles, such fixed charges as interest and insurance, driver's and helper's wages, the quantity and cost of gasoline, oil and grease used, the cost of garage labor, repair parts, tires and tire repairs, garage supplies, etc.

A specimen copy may be obtained free of charge by writing L7 on the postcard.

L8. Engine Overhaul Data

"Fits and Finishes" is the title of this 6-page publication developed by a leading machine manufacturer in the interests of providing up to date recommendations for fitting engine parts. Valuable information is provided on fitting piston pins in piston pin bosses, connecting rods and the finishes of cylinder walls in the reconditioning of engines.

Compact and easily read charts show stone recommendations for cylinder finishing and piston pin fitting. Piston pin clearances are given for ¾ to 1-in. diameter pins—to be followed when using the Sunnen hone. The author has dealt with the subject with skill and competence, providing interesting material for the mechanic as well as the fleetman.

Write L8 on the free postcard for a copy of this publication.

L9. Welding News

This new 24-page booklet covering welding news is filled with interesting photographs and articles on welding from all over the country. Material covers a wide range of subjects from welding on a third wheel for increasing flotation to making carnival rides. Illustrations and construction details will give the reader scores of ideas for shop hints and home made devices that will ease his work.

The booklet is free for the writing of L9 on the postcard.

L10. Concrete Floor Data

New 36-page illustrated booklet—The Masterplate Iron-Clad Concrete Floor—gives full information on the product and method which produce the nine features most important in industrial, commercial and institutional floors.

Job pictures show Masterplate Floors in service. Detailed illustrated directions for laying a Masterplate Floor are given—for both new construction and resurfacing old floors.

A copy of this booklet full of job-level information may be had by writing L10 on the free postcard.

L11. Personnel Selection

Developing a Better Personnel Selection Program is the title of this 4-page folder published to help management reduce costly errors in selecting men. Several phases of the hiring program are covered in detail. Use of the telephone check is recommended as is the patterned interview. The author shows why employers should consider carefully basic character traits in prospective employes. Guides to giving the applicant an over-all rating are discussed while detailed recommendations are provided for using new application blanks.

This publication should be read by those who handle hiring of personnel. Write L11 on the free postcard for a copy.

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New PRODUCTS

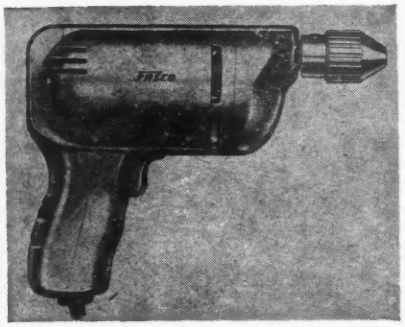
Illustrating and reviewing the newest developments in parts, accessories, shop equipment and tools. For more information mail free postcard

P44. Safe Tire Tread

The Safe-T-Grip machine applies better traction to tires on wet, slippery, ice or snow covered roads. Tire tread is pierced by hooked barbs that produce thousands of rough-edged holes that expose non-skid edges that grip the road. Only the top surface of the original tough tread is penetrated. To operate simply jack up the rear of the car, set one wheel down on the hooked barb rollers and the other on the wheel stand. The power from the car rotates the wheel on the rollers thus piercing the tread. International Equipment Co., Buffalo, N. Y.

P45. 1/4-in. Electric Drill

The new Fasco portable electric drill offers a non-tiring grip with carefully designed balance. Rated capacity is up to 1/4-in. in steel, and 1/2-in. in wood. A trigger switch permits instant control, and permits locking for continuous drilling. The universal motor operates on 110-120 volts, a.c. or d.c. Fasco Industries, Inc., Rochester, N. Y.



P46. Carburetor Cleaner

Cleaning of all internal carburetor parts in 15 min without removing the carburetor from the engine is accomplished with the GUMOUTER. Disconnect and cap the fuel line, attach the proper fitting to the fuel filter or carburetor fuel intake and by means of a thumb-knurled swivel fitting connect the hose. The other end of the hose is tightened onto the GUMOUT, can be suspended from the underside of the hood, and a 50-50 solution of gasoline and GUMOUT is gravity fed through the carburetor while the engine is running, resulting in the solvent cleaning action. Available through local jobbers. Pennsylvania Refining Co., Cleveland, Ohio.

P47. Porto-Fast Charger

This fast charger delivers 80 amperes for high rate charging. It features automatic time control, calibrated in minutes-of-charge and specific gravity. Charging rate control adjusts from 6 to 80 amps.

An Ohmite charging rate control switch, a General Electric fan motor, and a Westinghouse selenium rectifier are used. Marquette Mfg. Co., Inc., Minneapolis, Minn.

P48. Protective Paint

This multi-purpose paint, "Kem-Ban" provides both effective rust-inhibiting action and resistance to acids, alkalies, chemical fumes, moisture salts and alcohols. Applied by spray, dip or brush, it dries in 20 to 30 min. The coating, a poor supporter of combustion, is a uniform film of high hardness and has sufficient elasticity to withstand expansion resulting from temperature changes. The coating will not check, peel or crack. It adheres to practically any type of surface. For rust inhibitive applications, it is applied directly over metal without previous surface preparation and subsequent finish coats are applied directly over Kem-Ban. Ace Laboratories, Lakewood, Ohio.

(TURN TO PAGE 34, PLEASE)

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New Product Descriptions

Continued from Page 33

P49. Moisture Eliminator

This automatic water ejector for use on compressor tanks, air line traps and automotive air brake systems makes manual draining of tanks unnecessary. Easily installed in existing openings or through T's, the unit is said to prevent rusty tanks and keep them free from moisture. Master Equipment Corp., Dayton, Ohio.

P50. Bi-Metallic Piston

Excessive top ring-groove wear is eliminated in the DUALOY piston by means of a "Ni-Resist" top ring belt which is fuzed to an aluminum piston body by a molecular bond in which chemical action interweaves the structure of the two dissimilar metals. United Engine and Machine Co., San Leandro, Cal.

P51. Fuel Master

New performance in idling and driving is claimed for this throttle controlled venturi. Installed in the intake manifold at the carburetor flange, the manufacturer states that improved combustion characteristics are obtained.

The unit consists of a special-contoured venturi with a uniquely designed deflector rod projecting into the air-fuel stream. A diffuser hole passes through this rod near its base, with two additional orifices located near the top of the venturi body. W. J. Linn, N. Sheridan Ave., Pittsburgh, Pa.

P52. Slide Rule

Performance of a truck under specific operating conditions can be closely approximated with this Vinylite plastic slide rule. Rugged, resistant to oil, grease, water and most chemicals, the Vinylite rigid sheet plastic has high dimensional stability, permitting accurate computations. The rule gives the speed, gear ratio and hp required for any load or grade. Distributed by H. S. Watson Co., San Francisco, Cal.

P53. Cylinder Lubricator

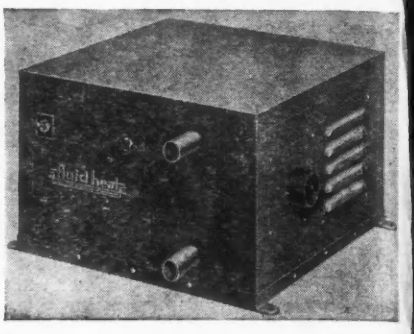
Available with a compartmented metal container to provide for the introduction of anti-detonant compounds, the new heavy duty top cylinder lubricator Ampco Model HDDF uses a single injection circuit. Input is controlled throughout an entire range of engine vacuum with a line equalizer added to the circuit to stabilize or accelerate the rate of input according to the lubrication or fuel requirements of an engine. Automotive & Marine Products Corp., Boston, Mass.

P54. Bendable Tail Pipe

A convoluted bellows type of leakproof bendable tubing is for replacement tailpipes and exhaust pipes. Its construction permits easy shaping to duplicate all bends in the original pipe. Once formed, the new pipe holds its shape as rigidly as any ready formed pipe. This tubing has been accepted by the Pennsylvania Bureau of Highway Safety, Everhot Products Co., Chicago, Ill.

P55. Coolant Heater

A 25,000 btu per hr heater for engine heating to prevent freeze damage and provide for easy starts, is available



for 6 or 12 volt systems, manual or automatic operation and occupies 1 1/3 cu ft. It provides heated coolant through an operating or non-operating engine maintaining engine temperatures at either full efficiency level or at safe low temperature when used on outside parked vehicles. Control can even be adjusted to warm coolant to full operating temperature before starting. Anchor Post Products, Inc., Baltimore, Md.

P56. Fork Truck

The FT Center-Control Fork Truck was designed to omit all unnecessary frills and to include only those features that contribute to efficiency, economy, safety and operator convenience and comfort. Quality features have been retained to assure efficient service. Units are available in the 3000 and 4000 lb capacity class. Baker-Raulang Co., Cleveland, Ohio.

P57. Female Live Center

For supporting centerless shafts this female live center has a 60-degree cup which receives the shaft end. Two sizes are available, one with No. 3 Morse taper shank and maximum work capacity of 1 in. and the other with a No. 2 Morse taper shank and ¾ in. work capacity. Both will take work down to 5/16 in. diameter. The center shaft extends through the taper shank and is rigidly supported. A precision ball bearing carries both the radial and thrust loads and a plain pilot bearing eliminates center shaft whip. South Bend Lathe Works, South Bend, Ind.

P58. Psychophysical Tester

The Porto-Clinic is a self-contained unit not much larger than an overnight case. It contains precision testing apparatus for visual acuity, color perception, field of vision, depth perception and reaction time. Operated by

(TURN TO PAGE 172, PLEASE)

COMMERCIAL CAR JOURNAL *February, 1950*

Chestnut & 56th Sts., Philadelphia 39, Pa.

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We are: Fleet Operator ☐; Number of Trucks in Fleet_____

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N
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NEW RPM DELO OILS cut engine wear-rate up to 85%

New RPM DELO Lubricating Oils contain advanced, special compounding. Proved in actual operation, they keep engines cleaner, increase protection and extend overhaul periods of all heavy-duty engines.

Cut liner wear rate up to 85%. In service under extreme operation conditions, these new RPM DELO Oils reduced wear-rates up to 85% over conventional heavy-duty type lubricants.

Reduced engine deposits as much as 75%. Superior compounding in new RPM DELO Oils kept top-ring grooves, oil rings, and skirt areas of pistons remarkably clean in high-temperature, high-output truck and tractor engines.

Saved 40% to 60% on maintenance. Records show that new RPM DELO Oils cut maintenance costs as much as 60%, reduced oil consumption 30% to 50% over the long run.

Proved in full range of engine service. This new line covers normal to extremely severe conditions. The grade that meets your needs will double protection against lubrication failures, give you all-around better engine performance.

RPM DELO Heavy Duty Lubricating Oil
A new, high quality-level compounded oil recommended for heavy-duty diesel or gasoline engines in normal to difficult service. (Meets U. S. Army Specification 2-104B.)

RPM DELO Special Lubricating Oil
Companion product to RPM DELO Heavy Duty Lubricating Oil. Has higher viscosity index for special operating conditions. (Also meets U. S. Army Specification 2-104B.)

RPM DELO Supercharged—1 Lubricating Oil
An entirely new product of higher quality-level than the products above. Fortified with new, more powerful compounding. Recommended for severe and abnormal engine service. (Meets U. S. Army Specification 2-104B, Supplemental List No. 1.)

RPM DELO Supercharged—2 Lubricating Oil
Highest quality-level oil, designed for extremely severe operating conditions. (Meets U. S. Army Specification 2-104B, Supplemental List No. 2, also the rigid requirements of Caterpillar Tractor Company's Superior Lubricants—Series 2.)

Send for the full report on new RPM DELO Oils. Actual test data furnished free. For complete information and the name of your nearest Distributor, write to any of the companies listed below.

Standard Oil Company of California
225 Bush Street, San Francisco 20, Calif.

The California Oil Company
Barber, N.J., Chicago, New Orleans

Standard Oil Co. of Texas
El Paso, Texas

The California Company
17th and Stout Streets, Denver 1, Colo.

RPM DELO LUBRICATING OILS

New and more Efficient Compounding keeps engines cleaner, increases protection, extends overhaul period

21 Smart idea

ONLY FORD GIVES YOU A CHOICE OF V-8 OR SI

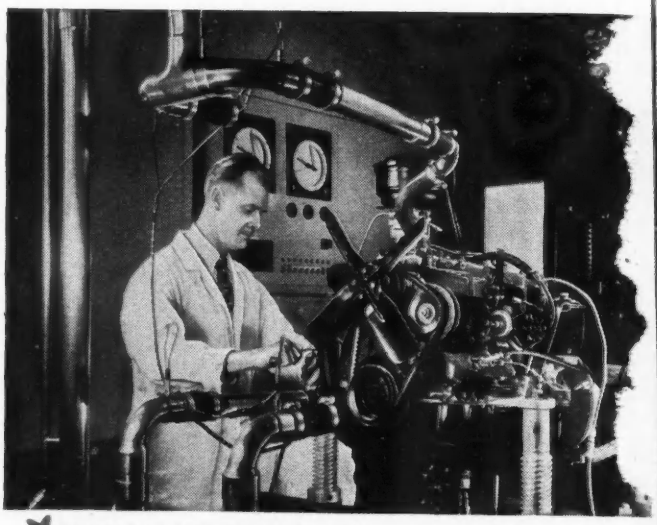
The Ford Truck line for 1950 gives you new models, new ratings, new power, new features—21 smart ideas in all, to help cut trucking costs.

NEW MODELS like the F-3 Parcel Delivery, which expand the 1950 Ford Truck line to over 175 models. This wide selection means that you should see your Ford dealer for the right truck for you, no matter what you haul. New G.V.W. rating increase on Series F-6 and F-8.

NEW POWER like the brand-new 6-cylinder Rouge 254 truck engine. Thus, for 1950 you have a choice of four great engines, two Sixes, and the only two V-8's in trucking. Only Ford gives you a choice of V-8 or Six.

NEW FEATURES like the full air brakes now available on the 1950 F-8 Big Jobs . . . single-speed axles for the F-6 and F-8 . . . new Synchro-Silent transmissions . . . new features that make driving safer and easier.

New models! New ratings! New power! New features! You'll find all these smart ideas in Ford Trucks for 1950. And you'll find the smartest idea of them all . . . Bonus Built construction which means big reserves of strength and power. That's why a 1950 Ford Truck is the smart buy for you. Your Ford Dealer can arrange quick delivery on most models. See him today!



NEW 110-HORSEPOWER SIX! The new Rouge 254 makes the 19 Ford F-6 the most powerful 6-cylinder Ford Truck ever built. Tl thoroughly proved 254 has Free-Turn exhaust valves, Autotherr pistons, chrome-plated top piston ring, High-Lift camshaft, a many other power-producing, cost-saving, smart ideas. A bran new, 4-speed Synchro-Silent transmission engineered for quiet oper tion, easy shifting and long life is standard with the new 254 engi

Model F-2: 5,700 lbs. G.V.W. Express or Stake

Model F-1; 4,700 lbs. G.V.W. Panel, Pickup or Stake

Model F-3; 6,800 lbs. G.V.W. Express or Stake

Model F-5; 14,000 lbs. G.V.W. Wheelbases; 134, 158 and 176 in.

Model F-4; 10,000 lbs. G.V.W. with Duals

Model F-3 Parcel Delivery Wheelbases; 104 and 122 in.

America's No. 1 Truck Value!

No. 1 in sales gains. Registration figures show Ford Trucks are scoring bigger sales gains than *all other makes combined*, based on the latest three months, compared to the first three months of 1949!

No. 1 in choice of engine types. Only Ford gives you a choice of V-8 or six-cylinder engine design.

No. 1 in experience. Latest registrations prove that 2,003,155 Ford Trucks on the road have marked up 18,567,865 truck years of experience . . . a record equalled by no other truck.

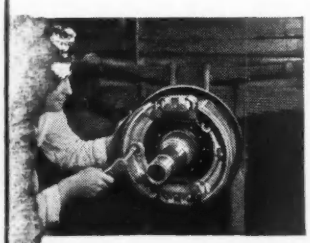
No. 1 in long life. Using latest registration data on 6,106,000 trucks, life insurance experts prove Ford Trucks last longer.

No. 1 in value. Over 175 models! The only V-8's in trucking! Two 145-h.p. Big Jobs rated up to 39,000 lbs. They're Bonus Built which means big reserves of strength and power.

Ford Trucks Cost Less Because—

for 1950!*

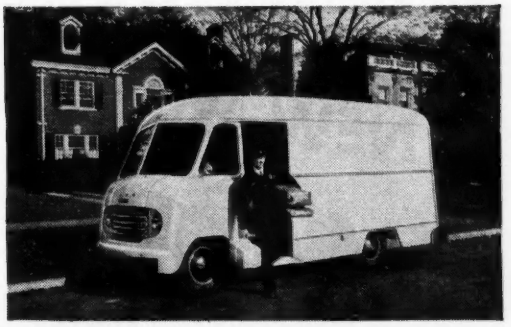
SE IN A FULL LINE OF OVER 175 TRUCK MODELS!



EW F-7 REAR BRAKES! Big x 5" hydraulic, dual cylinder. gh torque self-centering action th forward and reverse.

NEW AIR BRAKES available on he Ford Series F-8 Big Job ombine smooth flexibility with mmediate, positive action.

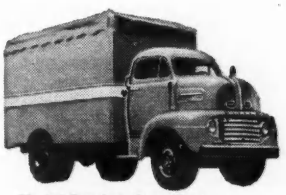
NEW WHEELBASES! Three of them for 1950 Ford Trucks. Series F-5 and F-6 now have a 176-in. wheelbase for bodies in the 15-ft. range. The 145-horsepower Ford Big Jobs have added two new wheelbases to get a total of five. First, a 147-in. wheelbase for tractors and dump trucks. Second, a 178-in. wheelbase for 15-ft. bodies.



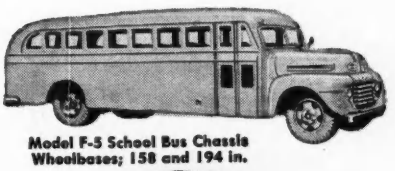
NEW PARCEL DELIVERY! Forward control chassis with grille, windshield and quarter-windows. You add your choice of bodies. Available in Series F-3 and F-5 (Special order).

New single-speed rear axle for F-8 • New extra-heavy duty clutch with 254 engine • Million Dollar Cab • Air Wing door glass ventilators • Level Action cab mounting • New Double Channel frame for Big Jobs • Gyro-Grip Clutches • New single-speed axle for F-6 • Roll Action Steering • New extra H. D. drive line with 254 engine • Quadrax rear axles • 4 engines—choice of V-8 or Six • New heavy duty, 3-speed Synchro-Silent transmission available for F-1 thru F-3 • Choice of over 175 models • Bonus Built construction.

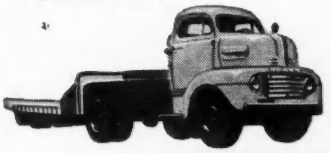
One of many 145-horsepower Ford F-8 Trucks operated by Michigan Motor Freight Lines, Inc. of Detroit, Mich.



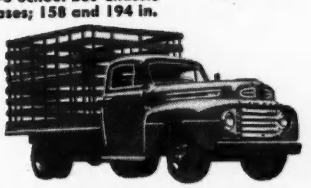
Model F-5 Cab-Over-Engine
14,000 lbs. G.V.W.



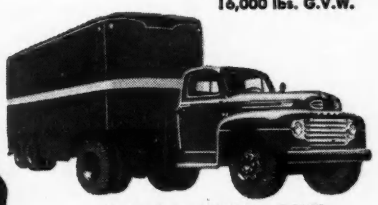
Model F-5 School Bus Chassis
Wheelbases: 158 and 194 in.



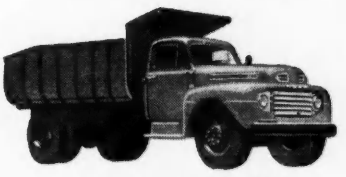
Model F-6 Cab-Over-Engine
16,000 lbs. G.V.W.



Model F-6; 16,000 lbs. G.V.W.
Wheelbases: 134, 158 and 176 in.



Model F-7; 19,000 lbs. G.V.W.
35,000 lbs. G.T.W.



Model F-8; 22,000 lbs. G.V.W.
39,000 lbs. G.T.W.

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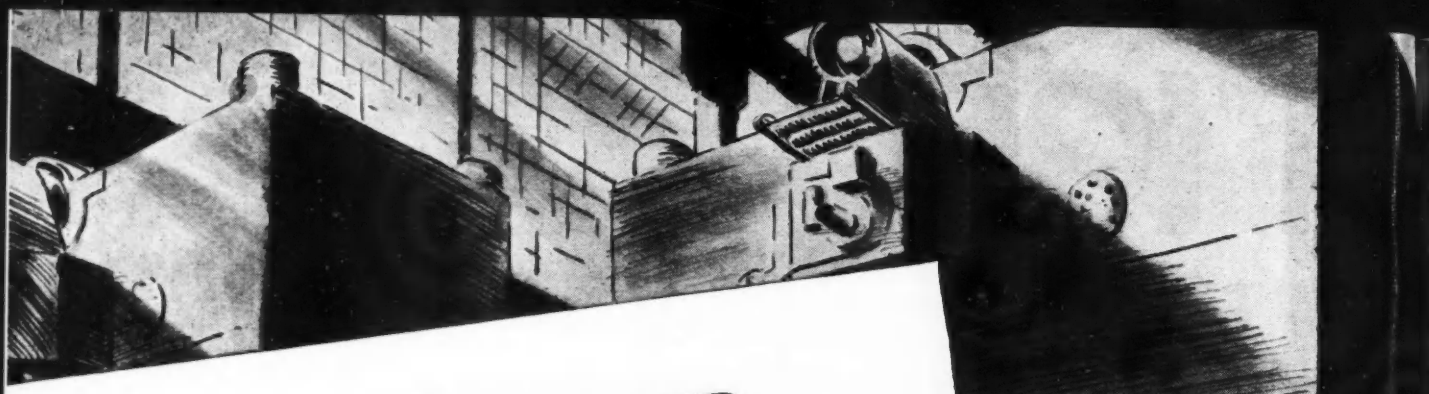
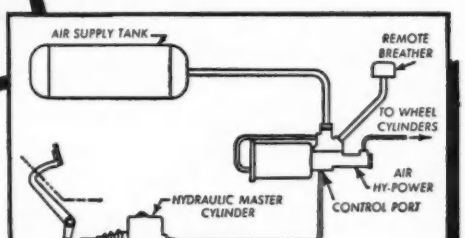
Using latest ...ion data on 6,106,000 trucks, life insurance experts prove Ford trucks last longer!



The NEW MIDLAND AIR HY-POWER BRAKE CONTROL

PROVIDES . . .

Air operation of your tractor by hydraulic brake and the control of your trailer air brakes by standard hydraulic-master cylinder.



Air Hy-Power piping diagram

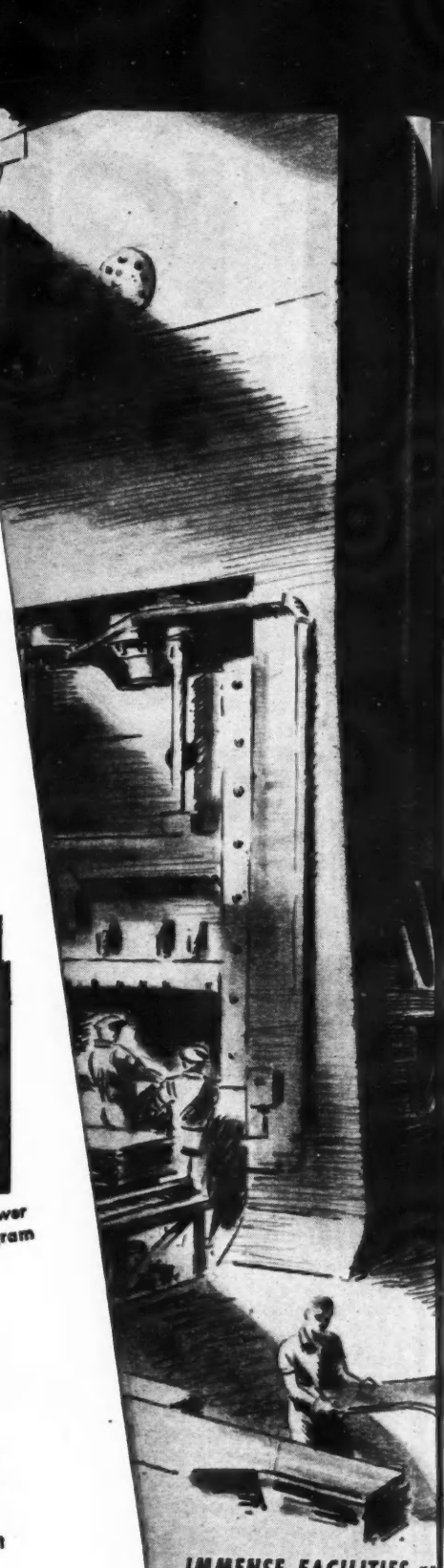
AIR OVER HYDRAULIC in it's Most Simplified Form

- **FEWER PARTS**
- **LESS WEIGHT**
- **DIRECT APPLIED POWER**
- **SEALED SYSTEM:** Protected from atmospheric conditions—No mud, water, rust, dirt, corrosion —All moving parts enclosed.
- **LONG LIFE—SIMPLICITY**
- **NO ADJUSTMENTS** required in power unit.

A NEW MIDLAND Development

Similar to the Vacuum Hy-Power unit. Comprised of three time-tested assemblies combined into a single device, using an air cylinder, a hydraulic cylinder and a portion of an air control valve. Nothing new except the combination.

1. Can be installed wherever convenient on vehicle
2. Eliminates air foot control valve
3. Not necessary to relocate master cylinder
4. Replaces air chamber power unit



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Air and Vacuum POWER BRAKES

World's Largest Manufacturer of AUTOMOBILE and TRUCK FRAMES

Air and Electro-Pneumatic DOOR CONTROLS

CCJ REPORTS

on News of the Industry

Convention Highlights . . .

It was a busy month for engineers, truck and trailer makers, and fleet operators alike, with conventions and get-togethers being staged from Mississippi to Chicago and points West.

In Detroit 3600 checked in at the SAE Annual Meeting (Jan. 9-13), establishing a record attendance and absorbing some of the newest developments in the field of power transmission, muffler design, fuels and brakes, among other subjects. A good percentage of chairs was filled with fleetmen from all sections of the U. S. They had come to check up on designers and factory engineers to see what can be expected in operating economy and improved vehicle performance. And some were disappointed. . . . But several papers will go down in transportation history as guideposts to better engineering. (See page 82 for paper on predicting road performance. Also page 81 for digest of papers on brake drum materials and on muffler design.) . . . As the curtain came down late Friday afternoon, most of those left agreed that the week had been both eventful and well worth the time away from home.

In Edgewater Park, Miss, taxes topped the topics, when the Truck-Trailer Manufacturers Assn. held their yearly confab. Two of the principal speakers stressed the importance of supporting bills before the Congress on the repeal of various taxes affecting the truck transportation industry. Fred Lautzenhiser, of International Harvester, urged his listeners to press for uniform method of vehicle taxation, elimination of supplemental taxes (which now number as many as 16 in one state), and recommended the support of the maximum gvw rating plan. (See Page 72)

Col. Bristbine, of the ATA, urged support in the fight to repeal Federal excise taxes on gasoline, powered vehicles and trailers, lubricating oil, tires and replacement parts. He said proceeds from these sources exceeded 1¼ billion annually, and were discriminatory against highway users because they were used for general expenses of government. Refer to page 72.

In New York, Jan. 16-20, General Motors made the headlines, when the corporation presented all of its new car models in a magnificent Midcentury Motorama auto show at the Waldorf-Astoria. With a well-planned preview, reception, luncheon, question-and-answer period GM met the press and others the first of the week to show them what made their cars, and their company tick. Later, 25,000 sq ft of floor space was opened to the public and 38 1950 models made their debuts.

And in Britain . . .

The Transportation Commission, with red face, has admitted that Great Britain's government-owned inland transport system is running into the red at the rate of $1,400,000 every week. By the end of 1950 losses may total between $148,000,000 and $168,000,000. The commission revealed the staggering bill before a tribunal hearing its application for higher rail freight rates. CCJ covers the British nationalization program. See page 87.

It's Hush Hush in California. . .

The Motor Truck Association of Southern California has set up a muffler noise committee to seek a solution for that problem—and none too soon (See page 81). Development of a muffler which will quiet large trucks without causing mechanical troubles constitutes a highly technical problem which must be solved to avert restrictive legislation. The committee will make tests with various types of mufflers and hopes to come up with some sort of recommendation.

Industrially Speaking . . .

The Aluminum Co. of America has just announced a new line of aluminum truck body shapes and forms which will be carried in open stock at warehouses throughout the country. This is the first time that the company has offered the fleet operator and the small body builder a complete line of extruded shapes and forms without the necessity of paying the cost of special dies. While these parts will not be offered as "packaged" units for a complete body assembly, they will enable the builder to procure all parts necessary for the building of almost any conceivable body size or style.

Purchase of the Davisbilt Products Co., Cincinnati, O., by the Highway Trailer Co. of Edgerton, Wis., has been announced by Henry L. Charlton, president of the 33-year-old trailer company. Acquisition of the Davisbilt plants will enable Highway Trailer to add a complete line of trailerized tanks and tank trucks to their present commercial trailer, utility truck body and oil field trucking equipment lines.

DATES AND DOINGS

FEB. 9—New York State Motor Truck Assn. annual dinner, Statler Hotel, New York City.

MARCH 6-9—Annual meeting American Road Builders' Assn., Netherlands Plaza Hotel, Cincinnati, Ohio.

APRIL 4-8—National Production Exposition, Stevens Hotel, Chicago.

APRIL 25-28—New England Legional Automotive Show, Inc., Mechanics Building, Boston, Mass.

APRIL 25-26-27—3rd Highway Transportation Congress of National Highway Users Conference, Mayflower Hotel, Washington, D. C.

PROVING GROUND TESTED *for less down-time*

OUR AIM is to keep your vehicles on the road *longer*. And we can. Constant proving ground tests assure more road time when fleets use Raybestos Heavy Duty Clutch Facings, Brake Blocks — or PG Truck Sets, factory-packaged to engineered standards in the correct combination of linings.

Raybestos

The Raybestos Division of RAYBESTOS-MANHATTAN, INC., Bridgeport, Conn.

America's Biggest Selling **BRAKE LINING**

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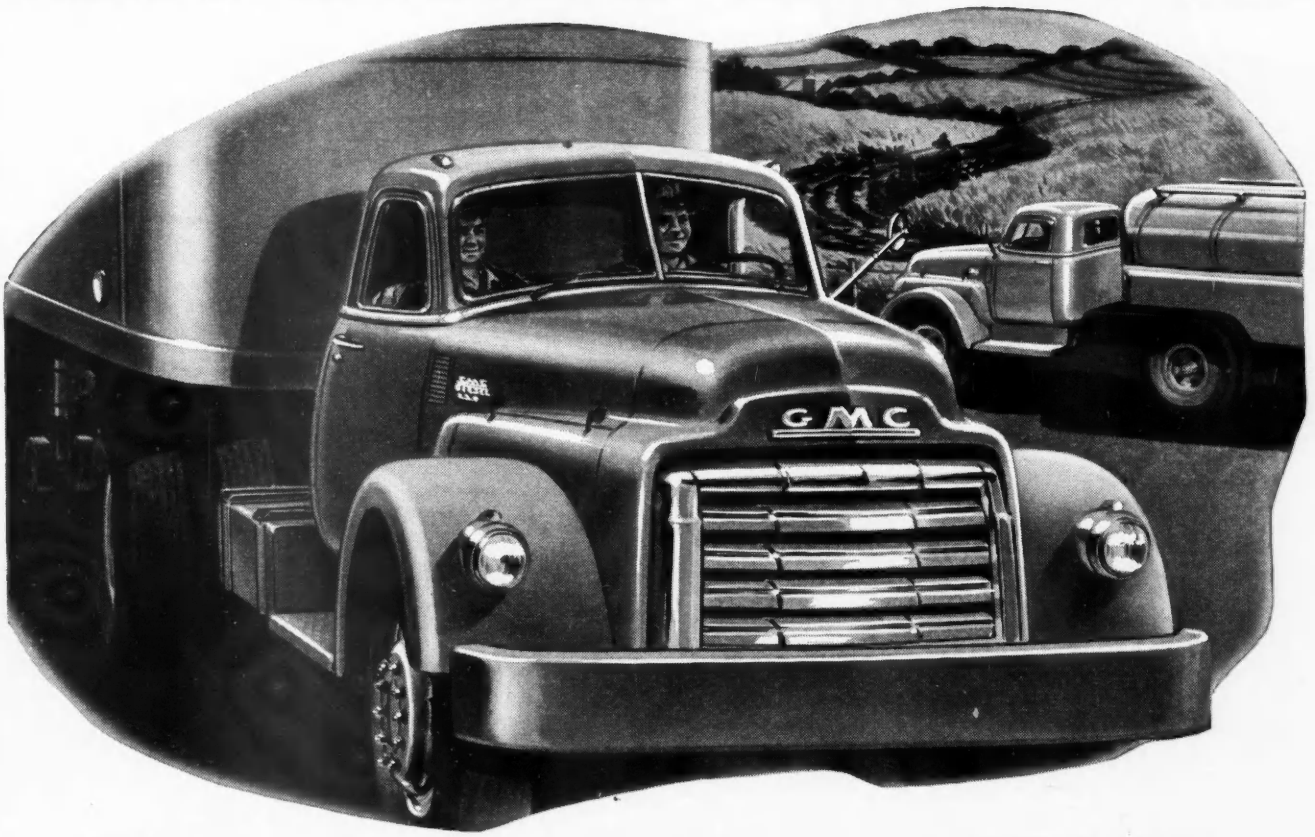
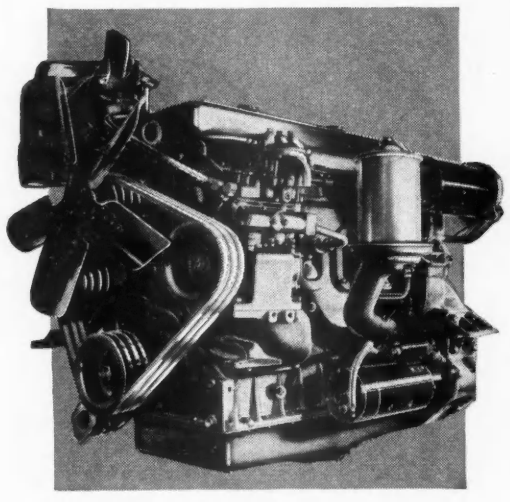
RAYBESTOS-MANHATTAN, INC., Manufacturers of Brake Linings • Brake Blocks • Clutch Facings • Radiator Hose • Fan Belts • Mechanical Rubber Products • Rubber Covered Equipment • Packings • Asbestos Textiles • Powdered Metal Products • Abrasive and Diamond Wheels • Bowling Balls

New "WEIGHT-SAVING" GMC DIESEL TRACTORS



Providing the Many Advantages of GM 2-Cycle Design for Many More Over-the-Highway Haulers



Famous "4-71" GM 2-cycle Diesel engine which powers GMC Diesel 640-650 models. Operates with double the power strokes of 4-cycle types, thus providing lighter weight, greater payloads. Has direct injection, Uniflow scavenging, many other extra-performance features.

There are two bright new stars in the over-the-highway transport field. They're the new GMC 640-650 series Diesel-powered tractors . . . high efficiency, weight-saving hauling units that open up great new profit possibilities for operators in the lower weight transport ranges.

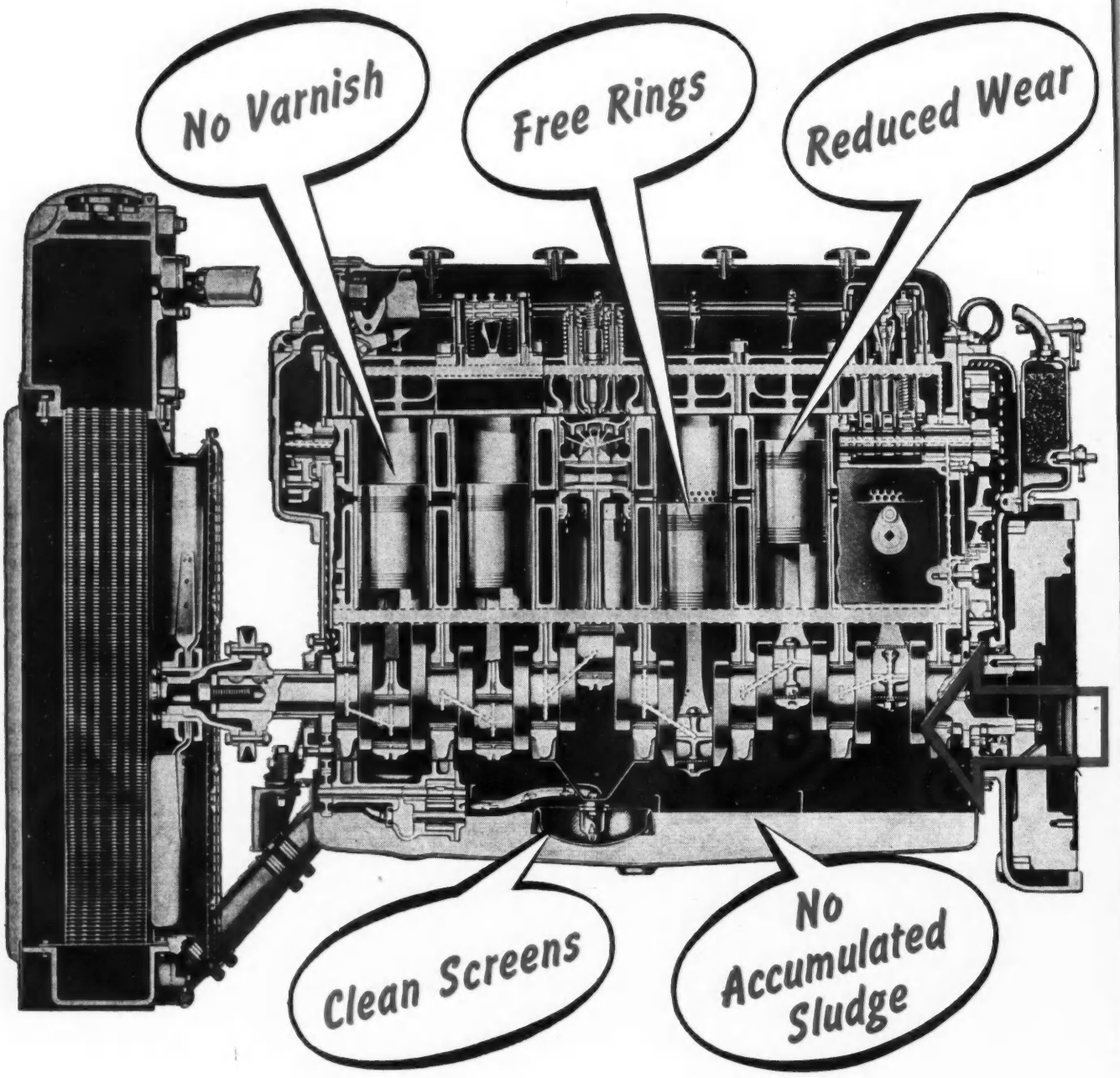
Their brilliantly performing engines, of the same GM 2-cycle design as used in the nation's finest locomotives and motor coaches, combine the industry's highest power-per-pound ratio with outstanding economy, long life and low maintenance.

With wheelbases ranging from 141 to 165 inches, CA dimensions of 60-84 inches and a vast variety of equipment options, the new 640-650 models are ideally suited for many types of highway hauling.

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION

GMC
GASOLINE • DIESEL
TRUCKS

In SEVERE DUTY, Can Double Engine



SINCLAIR HEAVY

Your Nearest Supplier of Sinclair Products Will Gladly Arrange for Lubrication

New *SUPER TENOL* Life Between Overhauls

New Sinclair SUPER TENOL is an oil specially developed to eliminate the high maintenance costs so frequently encountered in both types of "severe duty" service: — 1. High temperature, high speed, over-load; and 2. Low temperature, light load, long idle, stop-and-go.

Under these abnormal conditions, operators report new SUPER TENOL has more than DOUBLED the life of their equipment between overhauls.

If you operate diesel-powered or gasoline equipment in severe duty service it will pay you to change to new SUPER TENOL now—to keep equipment in operation many more days each year, to save time, labor and money.

DUTY LUBRICANTS

Counsel or Write to Sinclair Refining Company, 630 Fifth Avenue, New York 20, N. Y.

CCJ REPORTS

DETROIT DISPATCH

by LEN WESTRATE Detroit News Editor

New Ford Engines

Latest developments indicate that there will be no major new engines in the Ford truck line until the end of next year at least. The company is building a new engine plant and foundry at Cleveland, and it is not likely that any tooling for new engines will get under way until that unit is ready for operation. When that comes, the new engines will be the overhead valve type.

Canadian Trucks vs R.R.

Canadian truck operators also are having their troubles with the railroad interests. The Railway Association there has recommended establishment of a highway representative board of the Royal Commission on Transportation which reports to the government department of transport. The railroads make the same old charges about uneconomic competition by trucks with the railroads because of government subsidies for highway building and maintenance.

V-8 Engine for Studebaker

Possibility of a V-8 valve-in-head engine for Studebaker trucks is indicated by reports of tooling orders for such an engine in Detroit. Although the engines undoubtedly are intended for passenger cars it is a good likelihood that they also would be used in trucks as has been Studebaker policy in the past.

Diesels Gain in East

The trend toward diesel trucks in the Eastern part of the United States is accelerating, according to one manufacturer. Diesels first were introduced in that area in 1938, but apparently did not make any appreciable headway for several years. Now with more experience and a constantly improving product the diesel manufacturers are starting to make inroads in that area.

Fleet Discounts Out

Even though competition is getting increasingly bitter in the truck sales field, manufacturers do not expect to reinstate fleet agreements providing rebates for quantity purchases. There are two principal reasons—if one did it, all others would follow suit so that none would gain, and the attitude of the government toward quantity discounts as reflected in the Supreme Court decision against the Morton Salt Co., makes truck builders wary.

Torque Converters for Trucks?

Limited production of Chevrolet Powerglide transmission most certainly will preclude its possible use on small trucks for a long time. Prospect is for passenger car buyers who want the unit to have a long wait. Another manufacturer has been testing pickup and door-to-door delivery models equipped with an automatic transmission for more than two years, but still does not feel that the unit is ready to offer to the public. Loss of efficiency runs from 10 to 12 per cent, which engineers think must be improved.

Studebaker Delivery Studied

Studebaker, which does not now offer a package delivery model, has had one under development for a considerable period but is not pushing it at present. Apparently the company wants to take another look at the rather limited market for this type of vehicle before making a decision about producing it.

Rubber Roads Coming

Tests on rubber-asphalt surfaced highways in Virginia show 15.7 per cent safety factor in skidding on wet roads as compared to the conventional concrete surface. P. W. Litchfield, chairman of Goodyear Tire & Rubber Co., predicted recently that many thousands of miles of rubber and asphalt roads will be laid in this country during the next ten years.

Federal Truck Licensing

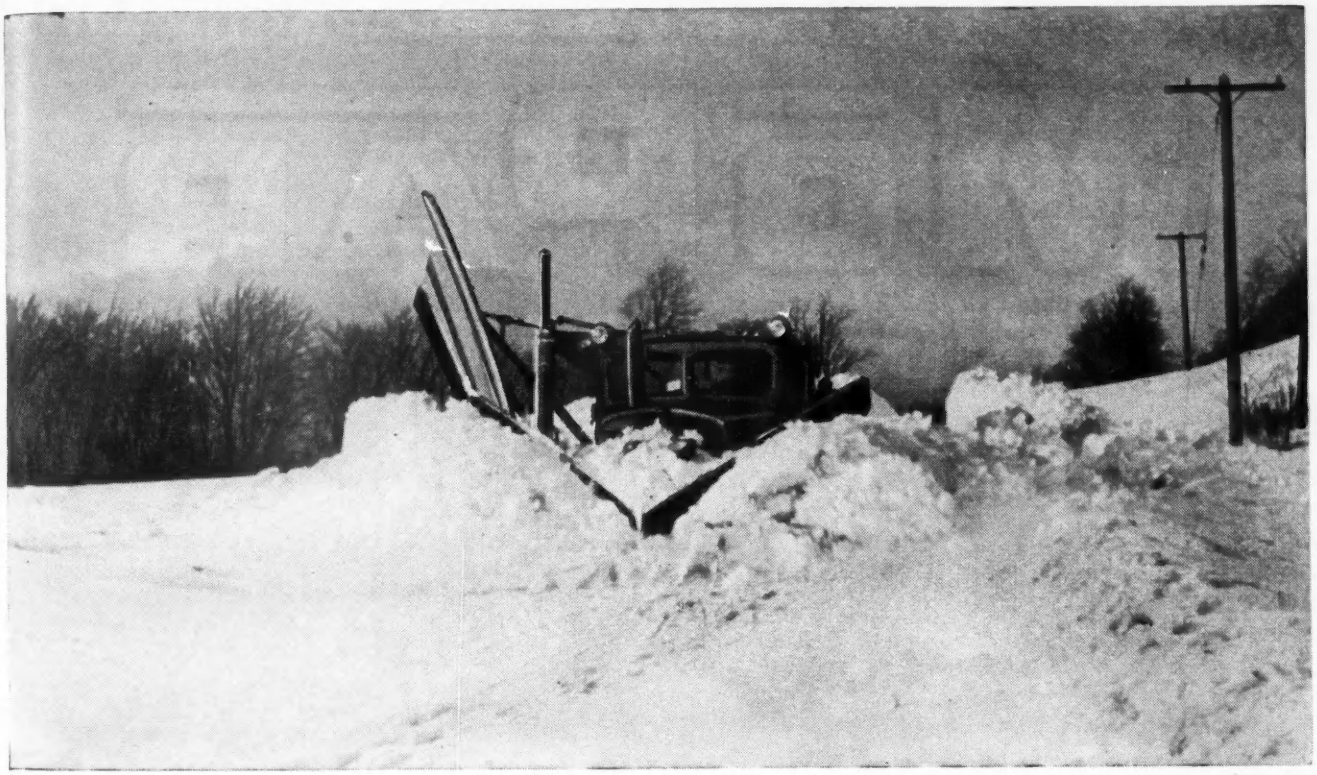
According to a report from Washington, a bill soon will be introduced in Congress to establish federal truck license tags. The bill will suggest that the fees collected by the government for such tags be distributed to affected states on the basis of the mileage traveled in each one.

Ford, Dodge Price Cuts

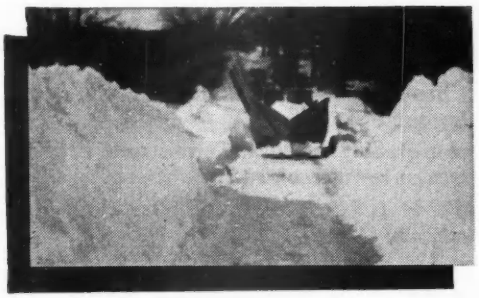
Neither Chevrolet nor GMC has had any official comment about the $40 to $125 price cut put into effect by Dodge recently, and the more recent Ford price cut, but it is certain that some adjustments will be made on certain models if sales indicate that the Dodge reduction is causing them to lose sales. The Dodge cut is the first general reduction since Chevrolet and GMC cut prices across the board last May. The Dodge reductions are: ½-ton models, $50; ¾-ton, $40; 1-ton, $50; 1½-ton models, $50; 1½-ton school bus chassis, $60; 1½-ton C-O-E, $75; 2-ton models, $50; 2-ton school bus chassis, $80; 2-ton C-O-E, $75; 2¾ton, $100; 3-ton, $100; 3½-ton, $125; Route Van, $100. No reductions were made on the 1-ton Power-Wagon and the 2½-ton models.

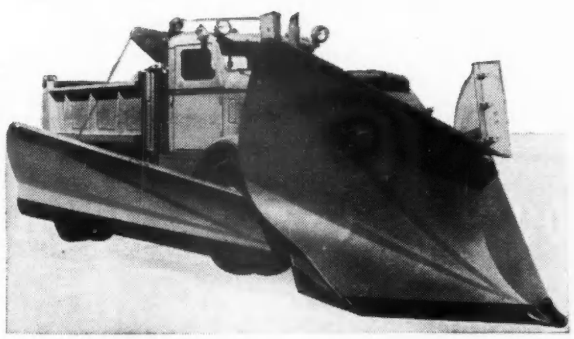
Ford also has cut prices on seven models of its truck line with reductions ranging from $20 to $80. They are as follows: ½-ton pick-up, $45; ½-ton panel, $45; ¾-ton express, $80; ¾-ton express heavy duty, $70; 1-ton conventional ton with 158-in. wb chassis and cab, $35; 1-ton chassis and cab, $35; 2-ton conventional with 158-in. wb chassis and cab, $20.

International Harvester Co. recently increased prices of its completely new 1950 models an average of 5 to 6 per cent on light models and 8 to 9 per cent on its heavy-duty line.



WHEREVER SNOW IS A PROBLEM . . .





. . . you'll find powerful Oshkosh equipment battering through the drifts to keep traffic moving. These rugged trucks, with sure-footed traction in ***all wheels,*** are ***engineered*** to stand up through many years of hard winter service.

. . . then, with equal efficiency, Oshkosh trucks shift over to on-and-off highway hauling, maintenance, construction and other necessary jobs. A sound investment—they pay their way every month of the year! Write for descriptive literature.

Service stations located at convenient points throughout the United States and Canada.

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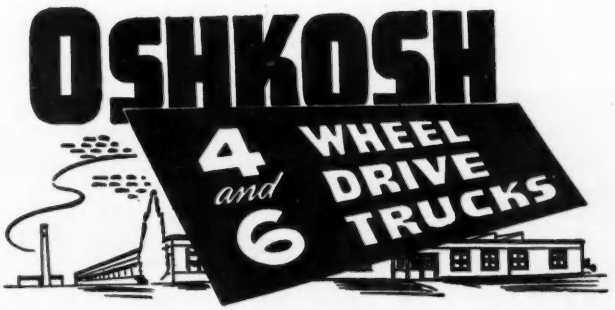

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SUPPLIED by Chrysler Corporation

No Rivets!
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More effective braking! Surface intact from one end to the other. More lining area in contact with drum.

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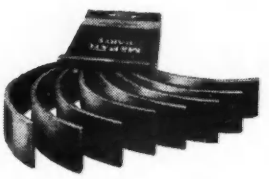

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MoPar Brake Shoe and Cyclebond Lining Assemblies. Ready to install. Factory-bonded. No special installation equipment needed.

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"Driver Dis-ease" CAN BE COSTLY!

MONROE E-Z Ride* Truck Seats Keep Operators Fit and Alert

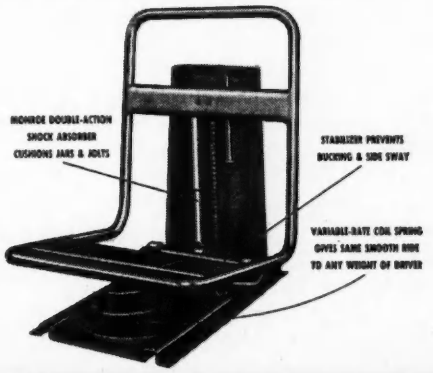
A worn-out truck driver is a bad safety risk. According to a reliable survey, 1 driver in 3 who had an accident caused by falling asleep was a truck driver.

Truck accidents are plenty costly in cargo and vehicle loss. Expensive lawsuits often result. And you, Mr. Fleet Owner, are the loser!

Monroe E-Z Ride Truck Seats keep your drivers feeling more fit—alert against accident dangers. Fatiguing, back-busting jolts are cushioned by a Monroe Double-Action Shock Absorber, plus a variable-rate coil spring that gives any weight of driver the same smooth ride.

For increased safety and efficiency, Monroe E-Z Ride Truck Seats are a sound investment for any fleet owner—for you.

**Reg. U.S. Pat. Off.*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CCJ REPORTS

WASHINGTON RUNAROUND

by GENE HARDY Washington Correspondent

Road Wear Tests Underway

Highway officials of 13 central and eastern states, who met in Columbus, Ohio, last December, to discuss truck sizes and weights, have lost no time in getting under way a project designed to determine the effect of heavy truck traffic on modern highway surfaces. A committee, composed largely of the highway commissioners of these states, hopes to get started with a series of road tests in southern Maryland by April 1.

The project will involve four different size trucks traveling day and night for six months over a section of reinforced concrete highway. This test method is expected to simulate 20 years' wear. The differing axle loads will be 18,000 lb., 22,400 lb., 32,000 lb., 44,800 lb., the last two being tandems. The section of road selected for the tests is 9 years old, and in top condition. During the tests regular traffic will be routed over a by-pass.

While this work has jumped the gun on the Committee on Economics of Motor Vehicle Sizes and Weights, which plans similar live road tests (CCJ, Jan., Page 50), the tests will be undertaken in cooperation with the committee as well as the Bureau of Public Roads.

Vehicle Improvement Conference

Mechanical design of vehicles, and its relationship to highway safety, again highlighted the annual conference between representatives of the ICC Motor Carrier Safety Section and truck and bus manufacturers. This series of meetings, never widely publicized, has done much to bring about design changes which result in vehicles that are safer to operate. The driver who finds the cab on his new truck more to his liking, and the maintenance man who is pleased with the new position of the gasoline tank, can probably trace these changes to some suggestion made at one of these informal meetings.

The 1950 meetings, held in Detroit, covered a variety of topics, according to ICC officials in attendance. Discussions with the truck manufacturers centered around: Difficulties with split-type rims; effects of the revised safety glass code; spring failures at shackles; design of slotted keyways and tapers in steering mechanism; control of changes in design after manufacture by parts manufacturers; and vehicle ratings and overloadings, with special reference to the steel hauling agreement. Also subjects of discussion were the position of the ICC in calling attention of manufacturers to defects in vehicles and the attitude of carriers and drivers toward certain features of vehicle design.

The meeting with the bus manufacturers included discussions of the following subjects: Effect of interior trimming on safety; need for safety vents on gasoline tanks; need for better means of escape; experience with automatic slack adjusters; need for better protection of application valves; the revised safety glass code with special emphasis on push-out requirements; the need for vertical exhaust stacks on diesel busses; and mechanical defects accidents on busses for 1948.

U. S. Highway Aid Boosted by $50,000,000

Federal expenditures for highway air during the next two years should be held to $500 million annually, an increase of $50 million above the current level, the Congress was told by President Truman in his budget message covering the fiscal year beginning July 1. He also stated that within this sum increased emphasis should be placed on the Interstate Highway System, a limited network, which he termed of the greatest importance to peacetime traffic as well as to national defense. The $500 million figure is well below the $810 million annually recommended by the American Association of State Highway Officials.

Mr. Truman also stated that the $504 million, which the Bureau of Public Roads expects to spend in 1951, is the highest annual level of Federal highway expenditures to date, except for emergency relief spending during the depression.

However, there is some danger that Federal attention may be diverted to the vast mileage of rural roads. Legislation introduced at the last session of Congress calls for the expenditure of a minimum of $100 million on rural roads to be matched by the states. The bills have the active support of several southern Senators and, should the Federal Government once get started on such a program, the end would be impossible to foresee. In an election year, the prospects of an all-weather road for every farm in the country is appealing campaign talk, regardless of the greater importance of the Interstate Highway System and the vast network of primary roads still needing attention.

ICC Studies Tire-Accident Reduction

The disproportionate number of truck accidents resulting from tire defects, when compared with similar accidents involving buses, has resulted in the ICC getting together with major tire manufacturers to try to work out something to cut down this type of accident. While nothing concrete has come from the first meeting of this group, it is believed that the final effort will be an educational program designed to instill in truck operators the importance of better tire maintenance.

ICC records show that in the two-year period 1947-48, reported accidents showed that nearly 300 involving trucks resulted from tire defects, while buses encountered only 26 mishaps from this cause. Property damage resulting from such accidents amounted to about $1,250,000 for trucks and only $10,000 for buses. These accidents involving trucks accounted for 26 fatalities, with no deaths resulting from the bus accidents.

(TURN TO PAGE 184, PLEASE)

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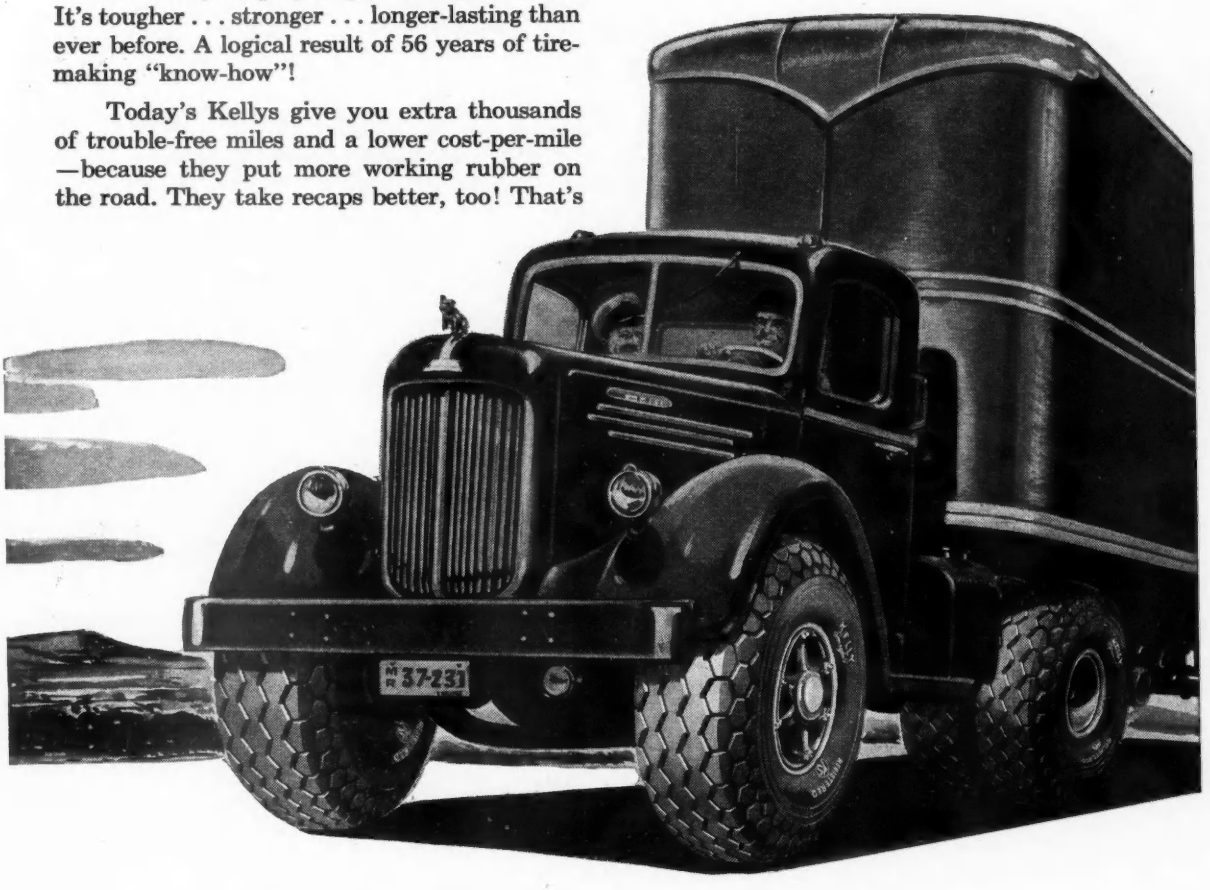
It's a profit-making deal to meet deliveries on time . . . keep contracts on schedule.

No wonder so many transportation men are switching to Kelly—the trucker's tire.

For Kelly helps you get through *on time!* It's tougher . . . stronger . . . longer-lasting than ever before. A logical result of 56 years of tire-making "know-how"!

Today's Kellys give you extra thousands of trouble-free miles and a lower cost-per-mile—because they put more working rubber on the road. They take recaps better, too! That's why you get more *total* miles when final mileage figures are counted.

Get Kellys on your trucks—and get higher trucking efficiency . . . lower trucking costs!



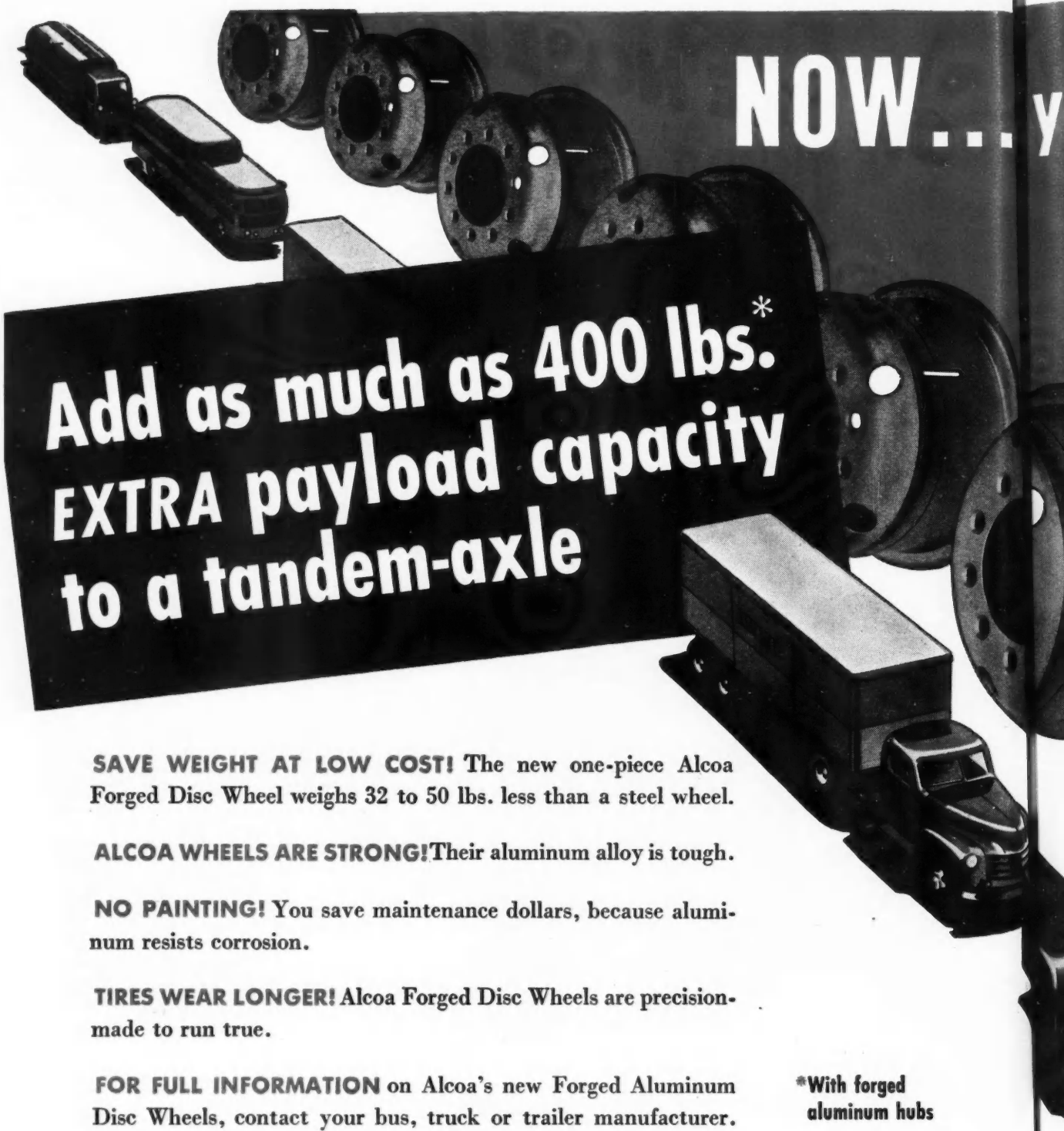
Know-how makes them Better!

KELLY REGISTERED | KELLY COMMERCIAL HEAVY TREAD | KELLY DUAL TRAC | KELLY LUG TRAC | KELLY GRIP TRAC | KELLY DELIVERY TRUCK TIRE

KELLY
Springfield
THE TRUCKER'S TIRE

A TOUGH KELLY FOR EVERY JOB!

THE KELLY-SPRINGFIELD TIRE COMPANY, CUMBERLAND, MARYLAND



NOW... y

Add as much as 400 lbs.* EXTRA payload capacity to a tandem-axle

SAVE WEIGHT AT LOW COST! The new one-piece Alcoa Forged Disc Wheel weighs 32 to 50 lbs. less than a steel wheel.

ALCOA WHEELS ARE STRONG! Their aluminum alloy is tough.

NO PAINTING! You save maintenance dollars, because aluminum resists corrosion.

TIRES WEAR LONGER! Alcoa Forged Disc Wheels are precision-made to run true.

FOR FULL INFORMATION on Alcoa's new Forged Aluminum Disc Wheels, contact your bus, truck or trailer manufacturer. Now available in 7.50 x 20 and 7.50 x 22 sizes. ALUMINUM COMPANY OF AMERICA, 1870B Gulf Building, Pittsburgh 19, Pa.

*With forged aluminum hubs

For Lightness and Strength... Insist on

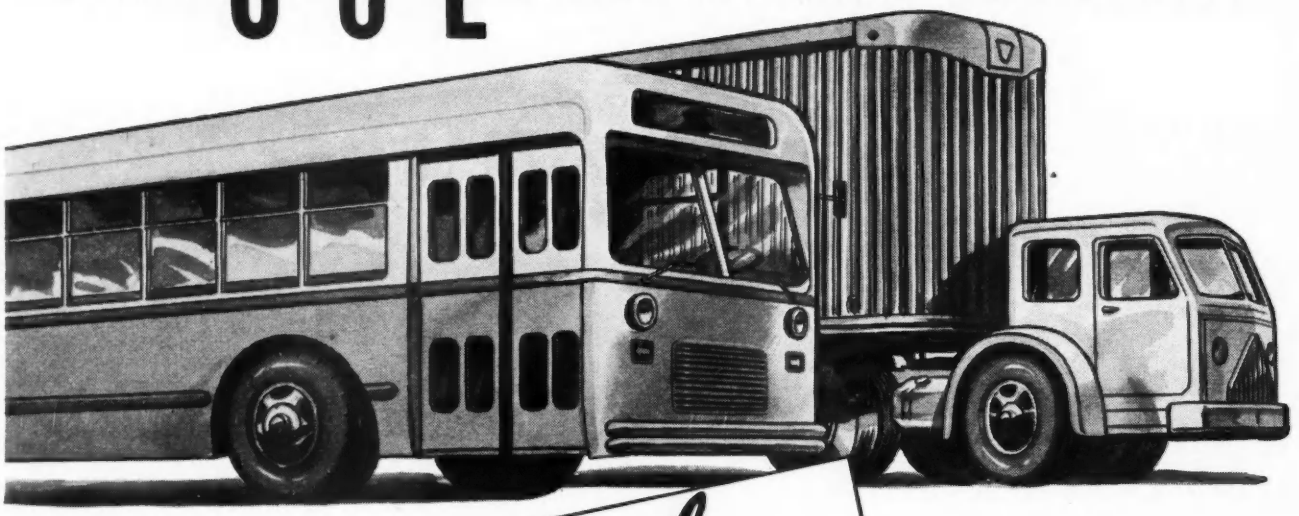
..you can roll off the pounds with ALCOA'S NEW FORGED ALUMINUM DISC WHEEL!

ALCOA FORGED ALUMINUM DISC WHEELS

ALCOA ALUMINUM

INGOT • SHEET & PLATE • SHAPES, ROLLED & EXTRUDED • WIRE • ROD • BAR • TUBING • PIPE • SAND, DIE & PERMANENT-MOLD CASTINGS • FORGINGS • IMPACT EXTRUSIONS
ELECTRICAL CONDUCTORS • SCREW MACHINE PRODUCTS • FABRICATED PRODUCTS • FASTENERS • FOIL • ALUMINUM PIGMENTS • MAGNESIUM PRODUCTS

FOR C·O·E TRUCKS AND BUSES...



Horizontal UNDER-FLOOR

... a new WAUKESHA ENGINE

• *Check these modern features:*

Crankcase—Combined crankcase and cylinder block lies in horizontal position with cylinders at 10° angle above horizontal supporting arms. Alloy iron casting is exceptionally rigid to insure constant alignment of all moving parts.

Cylinders—Renewable, wet-type cylinder sleeves of Molychrome alloy, heat-treated and hardened to insure long life.

Pistons—Heavy-duty aluminum alloy with four straight-side rings, all above the piston pin. Top ring is chrome plated. Piston pin is full floating.

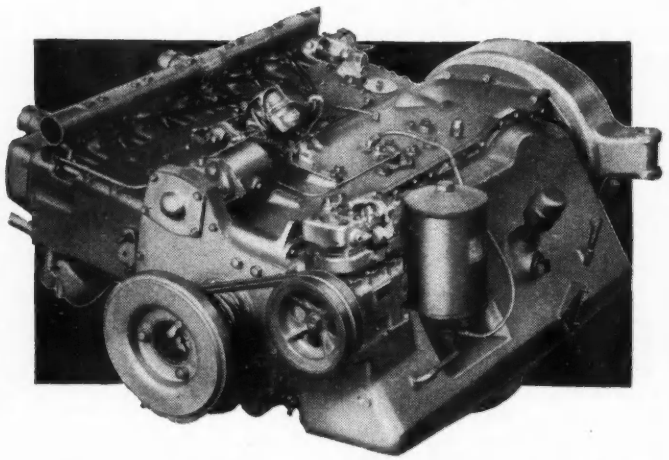
Counter-balanced Crankshaft—Drop-forged heat-treated alloy steel. Fully counter-balanced and mounted in seven 3¼-inch steel-backed copper-lead high-duty precision bearings. All main journals and crankpins are hardened to test 600 Brinell. The front end has a highly efficient vibration dampner.

Valves—Exhaust valves are Stellite-faced chrome-nickel forgings seating in Stellite inserts.

Cooling—A positive gear driven, ball bearing, packless coolant pump.

Lubrication—The positive gear driven oil pump forces oil under pressure to every main, rod, piston pin, camshaft, idler gear stud, and oil pump drive shaft bearing. An intermittent metered pressure line leads oil to the rocker arms and valve chamber as well as to the timing gear spray and air brake compressor. A large capacity oil sump with compartmentation insures a constant oil supply at all times. Both bayonet and indicating dial gauges are provided, as well as convenient inspection and drain openings. A large waste-packed filter is mounted on the oil pan.

Governor—Waukesha-built, gear driven, enclosed and flood-oiled over speed governor; does not prevent manual speed control up to predetermined top speed.



MODEL 140-GKB... Overall Lgth., 50 in.... Overall Width, 49 in. ... Overall Depth, 24 in.... Maximum Drop from Support, 11½ in.... Bore and Stroke, 4½ x 5½ in.... Six Cylinders... 525 cu. in. Displacement... Seven Main Bearings... Flywheel Housing, SAE No. 3 ...172 hp. Max. at 2600 rpm.

•

You'll want to learn the other details. Write for full particulars or engineering consultation. No obligation.

WAUKESHA MOTOR COMPANY • WAUKESHA, WISCONSIN

NEW YORK • TULSA • LOS ANGELES

MAKE THIS YOUR JACK INSPECTION MONTH

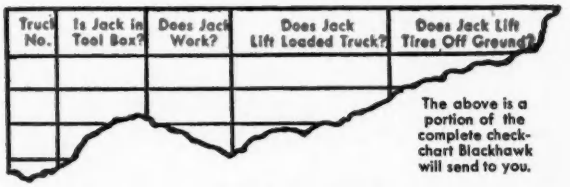
Are Your Drivers Equipped to Change a Tire on the Road?

More and more Fleet Superintendents are adopting the *standard practice* of periodically inspecting all their jacking equipment. And why not! A faulty or missing jack can mean an expensive, embarrassing road delay. Jacks sometimes disappear from tool boxes . . . they occasionally need oil . . . and sometimes the wrong-size jack is accidentally shifted from one truck to another. It *pays* to check!

Only Blackhawk Jacks are tagged with this "Service-Proved" seal

PLAY SAFE! PUT A BLACKHAWK JACK IN EVERY TRUCK. Free yourself from *jack worry*. There's a big difference in jacks — and Blackhawk gives you most for your money. Buy the best . . . buy from your Blackhawk Jobber.

SEND FOR THIS CHART

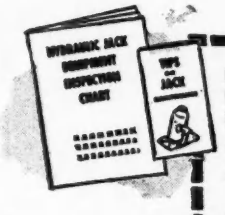


The above is a portion of the complete check-chart Blackhawk will send to you.

A helpful check chart will be rushed to you free by Blackhawk on request. Or, you may wish to make your own chart. At any rate, the important point is to *systematically* and *periodically* make sure that all your jacks are on deck and in shape for emergencies.

MAIL THE COUPON . . . get your free inspection forms . . . and "Tips on Jack Maintenance"

Along with your Jack Inspection Check-Charts, we will send you important, recently-developed "Tips on Jack Maintenance". They apply to *all* brands of jacks and are sure to promote savings and safety.



BLACKHAWK MFG. CO.
Dept. J-1120
Milwaukee 1, Wis.

Rush FREE "Jack Inspection Check Charts" and "Tips on Jack Maintenance".

Name.....

Firm.....

Address.....

City.....Zone...State.....

BLACKHAWK

PORTO-POWER • HYDRAULIC JACKS • WRENCHES

LAUGH IT OFF

The retired truck manufacturer was showing his nephew through his trophy room.

"Gee, Unc!" the nephew exclaimed admiringly, staring at all the specimens, "You must have shot the biggest animal of every kind in the world. Tell me, what was your biggest hunting thrill?"

The erstwhile truck builder stared absently, then a longing glint came into his tired old eyes. "In my youth," he said, "I had my greatest hunting thrills in the city parks, hunting the skirt-covered gazelle!"

CCJ

The young Shop Foreman was taking his new girl friend out for a drive. "I don't suppose," he said hopefully, "that you ever park along dark roads with boys."

"Indeed I don't!" she snapped.

"I guess we'd better not stop then," said the Shop Foreman rather disappointedly.

"But you're not a boy," she conceded graciously. "You're a man."

CCJ

The storage battery manufacturer became a millionaire and retired without having learned to read or write. He got along very well, however, by signing his checks with two crosses. One day his banker called him up and said: "What's wrong, you've signed your check with three crosses?"

"Oh, that's all right," the ex-manufacturer said. "My wife has gotten social ambitions and thinks I should have a middle name."

CCJ

Sobbingly, the beautiful young lady clung to him, kissing him right up to the time of departure, and he tore away from her embrace just in time to hustle her on board the bus as it left the terminal. The kindly driver took time out to escort her to a seat. "There, now, you needn't cry so just because you are leaving your husband," he said. "You'll probably be seeing him again soon."

"That's just it," she sobbed. "I wasn't leaving my husband . . . I'm going back to him."

CCJ

Catty Cora, secretary to the president of Fleety-Fleet Express, was giving some advice to her young niece concerning the best procedure to follow in achieving success in the business world as a private secretary to a baldheaded business man.

"Go into your work with lots of enthusiasm; stay on the job; work overtime if necessary," said Cora. "And last but not least, every time you have an opportunity let your boss know you are determined to show your ability or bust."

CCJ

Weavin' Willie, our City Deliveryman, says that football season is the time of the year when you can walk down the street with a blonde on one arm and a blanket on the other and no cop gives you a funny look.

CCJ

SWEET YOUNG THING: "I NEARLY FAINTED WHEN THE BOY I WAS OUT WITH LAST NIGHT ASKED ME FOR A KISS."

FREIGHT CLAIM CLERK: "BABY, YOU'RE GOING TO DIE WHEN YOU HEAR MY PROPOSITION."

CCJ

The automotive parts distributor was making a tour of his various departments. In the stockroom he stopped and stared. A boy was leaning against a packing case, idling. "How much are you getting a week?" demanded the parts man.

"Twelve dollars," the boy replied.

"Here's your $12. Now get out. You are through."

The boy pocketed the money and departed. The parts distributor turned to his chief clerk.

"Since when has that fellow been with us?"

"Never, that I know of," replied the clerk. "He just brought over a note."

Resume work

"Have you checked with Petrillo?"

Another Crescent Innovation!

CRESCENT-WIRY JOE MAROON PLASTIC CABLES

CRESCENT LEADS AGAIN! *Now,* the famous Crescent-Wiry Joe Maroon Cables are *plastic* to make them even better than ever before!

These advantages of plastic are universally established:

- **PLASTIC** is impervious to oil, water, grease, heat, abrasion, *and is highly resistant to acid.*
- **PLASTIC** is extremely flexible.
- **PLASTIC** *does not support flame.*
- **PLASTIC** is modern.

Add these features to the already outstanding list of Crescent-Wiry Joe Maroon Cable features and you have the *new* CRESCENT-WIRY JOE

MAROON PLASTIC CABLES!

√ Check the wire on every job!

WHEN NEXT IN OUR NEIGHBORHOOD, DROP IN—SEE HOW CRESCENT-WIRY JOE AUTOMOTIVE CABLE IS MADE FROM COPPER TO FINISHED PRODUCT IN ONE PLANT UNDER ONE ROOF

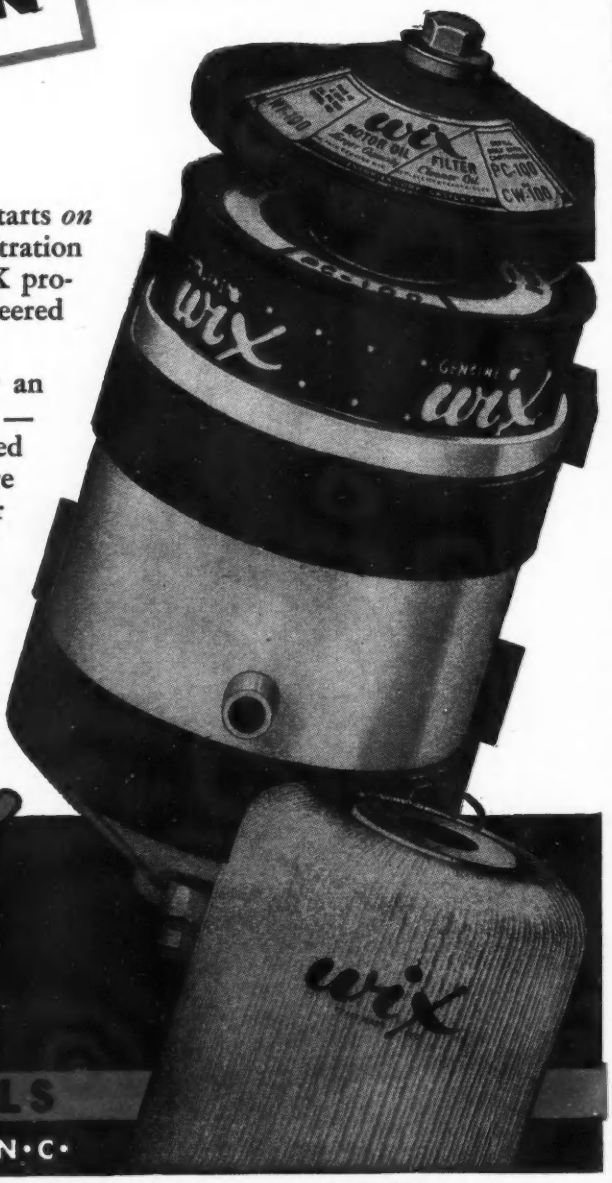
PREVENTIVE MAINTENANCE

that travels with the truck...

wix ENGINEERED FILTRATION

Engine trouble doesn't start in your repair shop. It starts *on the road* — and that's where WIX Engineered Filtration works for you! Over the longest, roughest haul, WIX protects engine performance by assuring CLEAN, engineered lubrication.

WIX uses the type of filtering material chosen by an overwhelming 85% of big-time Fleet Operators — selected cotton threads, skillfully blended and processed in the *exclusive WIX* way! These superior threads are precision packed to correct, uniform density under flawless electronic control. No "loose" spots . . . no "dead" spots . . . no channeling—but top filtering action all the way through! That's why WIX gives you money-saving extra hours of efficient oil filtration! Order engine-protecting, oil-preserving WIX Filterefils and high capacity WIX Filters from your Jobber NOW!



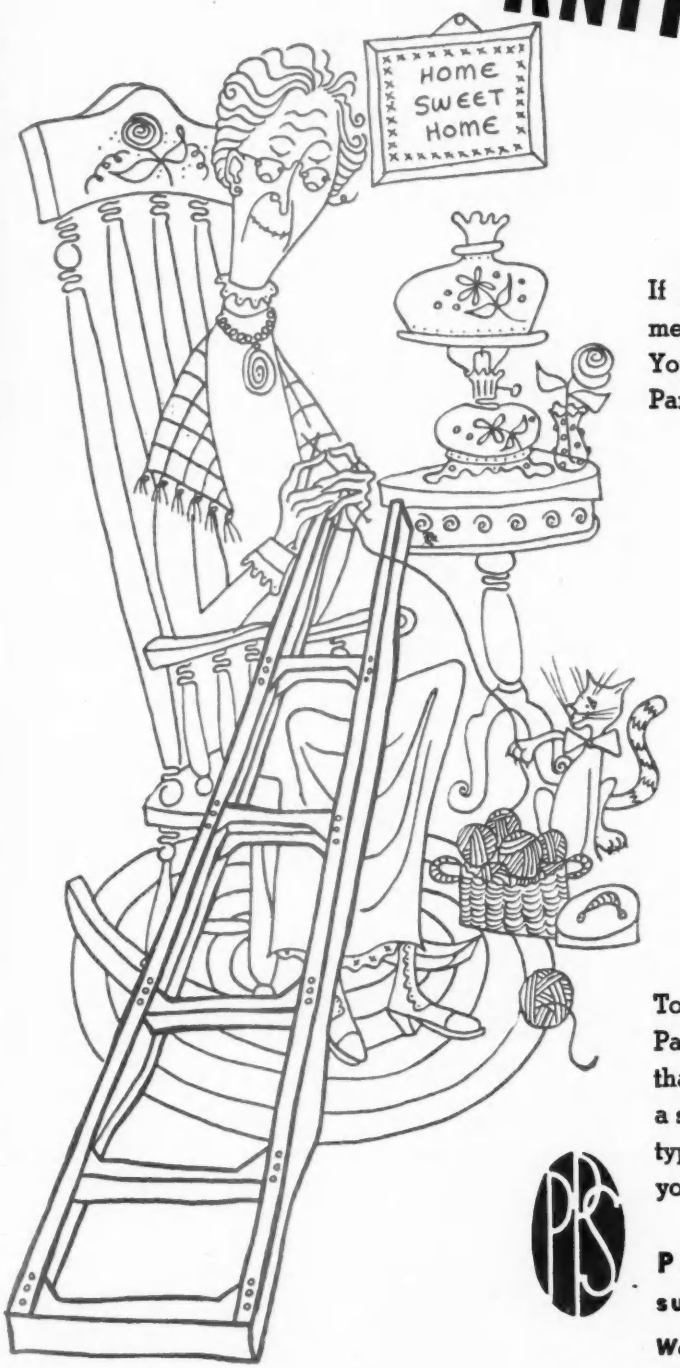
wix

FILTERS AND FILTEREFILS

WIX ACCESSORIES CORP'N • GASTONIA • N•C•

CANADIAN FACTORY: WIX ACCESSORIES CORP. LTD., 11 Wabash Ave., Toronto 3, Ont.

WHY YOUR TRUCK FRAMES GET "KNIT TOGETHER"...



If you just slap together a few side rails and cross members, you don't get really *good* heavy duty frames. You have to "knit them together" as we do here at Parish to give you—

- LIGHT WEIGHT made possible by Parish heat treatment that "knits the steel together" to prevent fatigue and crystallization, even when thin sections are used for side rails.
- EXTRA STRENGTH is in each frame because the grain size of the steel is controlled, instead of being "guessed at". (Every Parish Heat Treated Frame is 100% tested and checked for hardness, straightness and dimension tolerance before it leaves our plant.)

HOW TO GET MORE WORK FROM YOUR HEAVY DUTY FRAMES

To help you increase frame life and reduce maintenance, Parish maintains an Engineering Service Department that specializes in problem solving. Whether you have a small welding job or a straightening problem—on any type of frame—put your problem in our hands. Naturally, you won't be obligated.

PARISH PRESSED STEEL COMPANY
subsidiary of Dana Corporation READING, PA.

Western Representative: **F. SOMERS PETERSON CO.**
524 Folsom St., San Francisco, Cal.
413 East 12th St., Los Angeles, Cal.

●USEFUL BULLETIN ON WELDING tells how to get best results when making alterations on heat treated steel frames. Write for your free copy.

ONLY PARISH STEEL HEAT TREATED HEAVY DUTY FRAMES GIVE YOU THE STRENGTH OF STEEL *at no sacrifice of payload!*

SPINNING POWER

GLOBE-UNION

The Engineered Battery

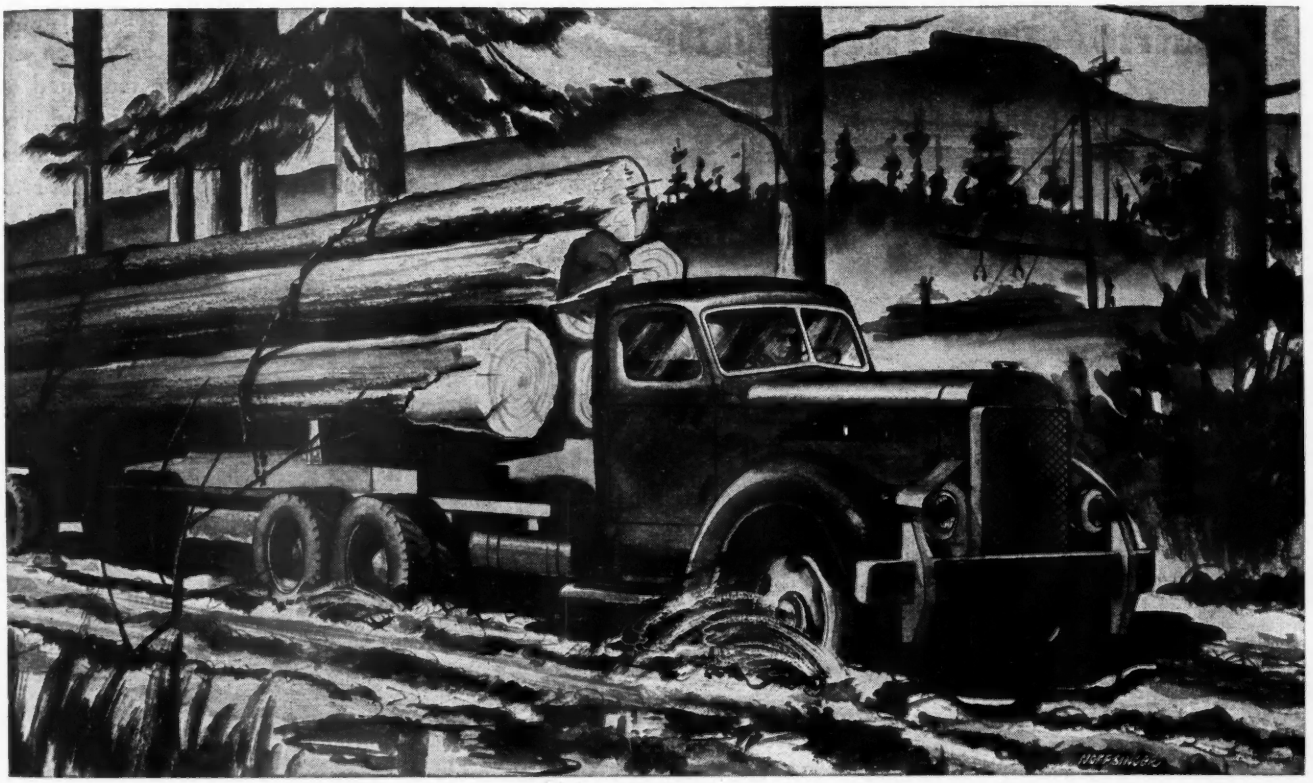
SPLIT-SECOND STARTING

12 FACTORIES TO SERVE YOU

Each produces batteries identical in quality and performance with those produced at every other plant. Wide dispersal of these factories nationally insures lowest possible freight costs and faster service.

GLOBE-UNION INC.
MILWAUKEE 1, WISCONSIN
Atlanta, Ga. • Cincinnati, Ohio • Dallas, Texas
Los Angeles, Calif. • Medford, Mass. • Memphis, Tenn.
Oregon City, Ore. • Philadelphia, Pa. • Emporia, Kan.
Mineral Ridge, Ohio • Reidsville, N. C.

WHEN THE JOB IS *Tough*



ROSS BRINGS EASE . . . AND ECONOMY

A LOAD OF LOGS, over winter roads, makes the steering job a very tough one. Here, as in all heavy duty service, Ross steering gives maximum ease, control and safety . . . under any road or weather condition.

The Ross policy of incorporating advancements in design as they are proved by exhaustive tests has resulted in many recent improvements. Current Ross models have:

(1) *Increased mechanical reduction* . . . (2) *More compactness* . . . (3) *Reduction in weight* . . . (4) *Greater arm angular-travel* . . . (5) *Improved metallurgy* . . . (6) *Increased efficiency.*

Throughout 42 years of leadership in this industry, Ross gears have been distinguished for long life, simplicity of adjustment and maintenance of long-recognized qualities of safety, stability and performance. We invite discussion of any steering problem.

Ross

Cam & Lever **STEERING**

ROSS GEAR AND TOOL COMPANY • LAFAYETTE, INDIANA

Chas. F. Kettering said—

"Engineering is a combination of brains and materials ... the more brains, the less materials"

Why haul unnecessary EMPTY WEIGHT poundage that reduces the PAY LOAD part of the legal gross weight allowed for your trucks?

MECHANICS Roller Bearing UNIVERSAL JOINTS Truck PROPELLER SHAFTS are made 34% lighter in weight than any others now in use — without loss of torque capacity. They are stronger than shafts that are half again heavier. MECHANICS 34% lighter UNIVERSAL JOINTS PROPELLER SHAFTS run smoother and place much less load on transmission and pinion bearings. Their fitting yokes are machined all over. With weight-saving worth $1.00 per pound, you can't afford to handicap your trucks by making them haul useless, non-profit-earning weight hundreds of thousands of miles.

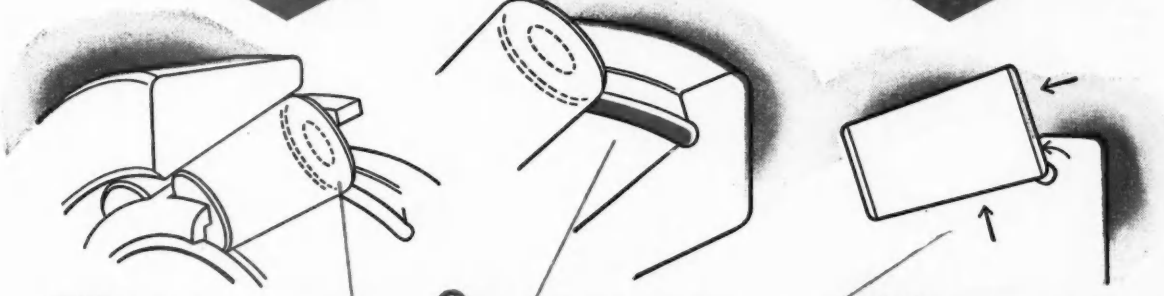
By reducing *deadweight* 28 pounds — through using MECHANICS 34% lighter UNIVERSAL JOINTS — trucks increase their PAYLOAD over 5,000 ton-miles (during 400,000 miles of operation) *without extra cost.* For the designer who wants to add to the ton-mile capacity of his truck — without increasing its gross weight — our engineers will be glad to help specify a weight-saving MECHANICS Roller Bearing UNIVERSAL JOINTS Truck PROPELLER SHAFT application.

Let our engineers help add to the ton-mile PAYLOAD capacity of YOUR trucks.

MECHANICS UNIVERSAL JOINT DIVISION
Borg-Warner • 2034 Harrison Avenue, Rockford, Illinois

BOWER BEARINGS ARE

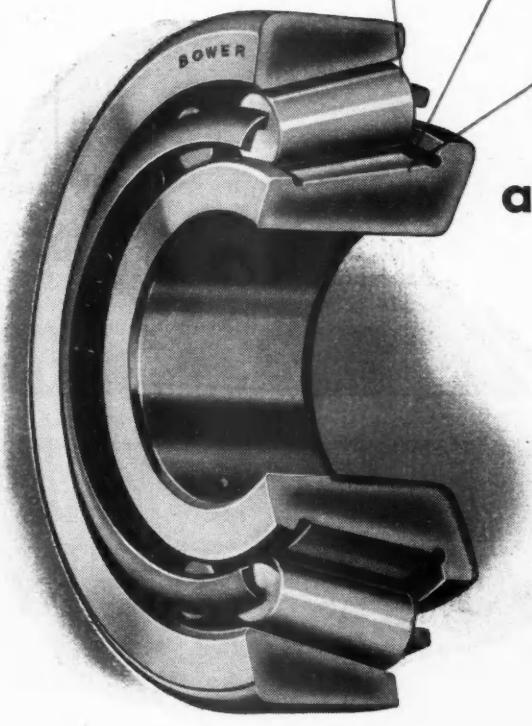
SPHER-O-HONED



SPHER—Stands for generated spherical roll-head and flange surfaces designed and manufactured to the exact contour they would otherwise acquire in use. Alignment is improved; wear minimized.

O—Stands for the liberal oil groove which assures a generous supply of lubricant at the critical point where the roll-head operates against the flange, greatly reducing destructive friction.

HONED—Stands for hard, durable races which are honed to micro-inch smoothness. This bonus of precision eliminates the problem of run-out and also prolongs the life of the bearing.



. . . to improve your product and your plant equipment, too!

Look closely at Bower Spher-O-Honed bearings. Note these basic refinements in design and construction—generated spherical roll-head and flange surfaces; large oil grooves; precise, durable races.

You'll see they can benefit your manufacturing operation in *two distinct ways:*

Installed in your product, Bower bearings contribute positive dependability—wear resistance—long life. They can help make yours a better product, better able to meet competition.

Installed in your plant equipment, Bower bearings guard the precision of your machines—boost efficiency—reduce maintenance problems. They improve your ability to produce a quality product.

Whatever you manufacture, from limousines to bulldozers—and whatever plant equipment you use, from machine tools to lift trucks—it will pay you to standardize on Bower bearings.

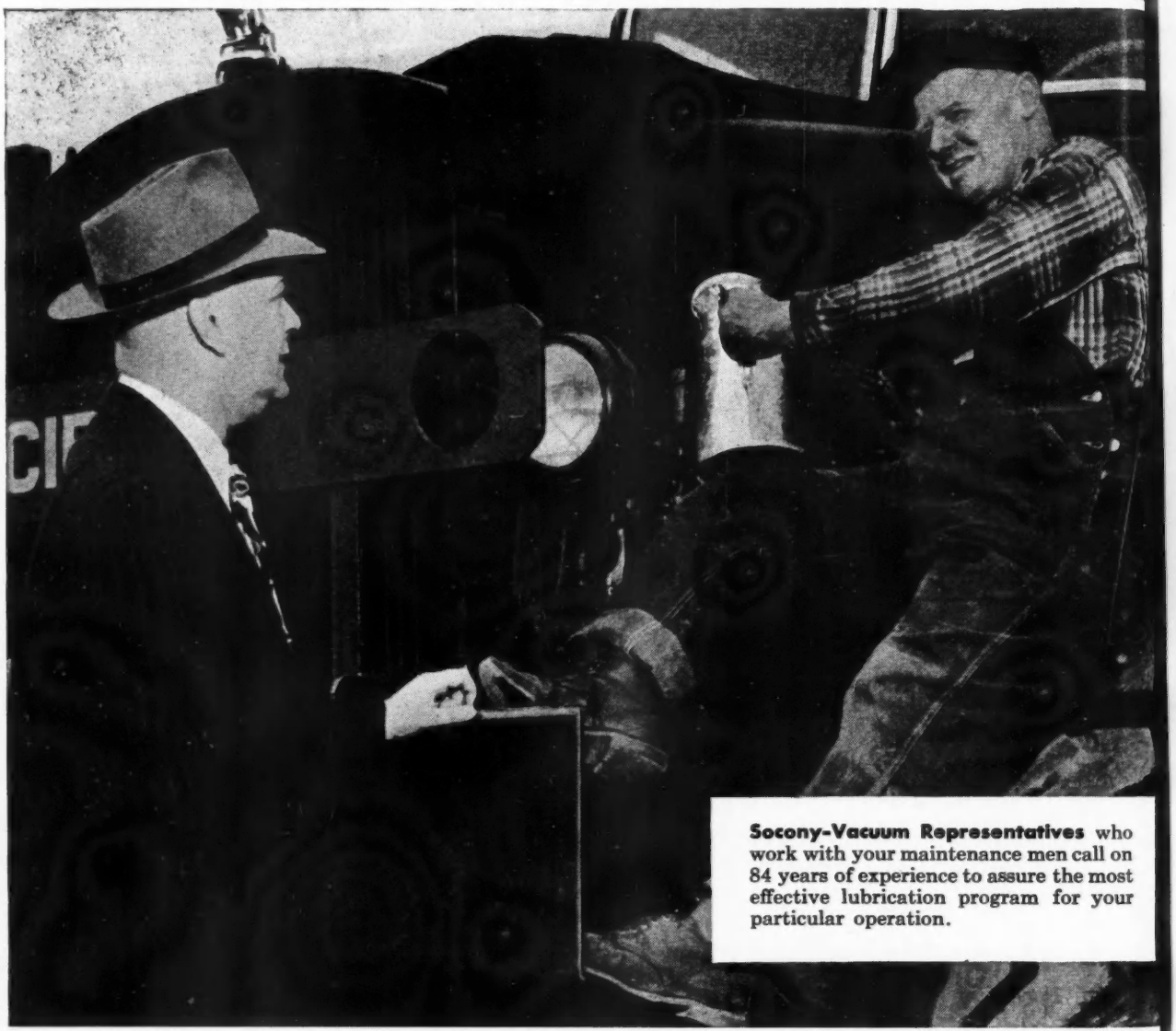
BOWER ROLLER BEARING COMPANY, DETROIT 14, MICH.

BOWER

ROLLER BEARINGS

SPHER-O-HONED

RECOMMENDED OR APPROVED BY 11



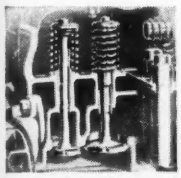
Socony-Vacuum Representatives who work with your maintenance men call on 84 years of experience to assure the most effective lubrication program for your particular operation.

ENGINE AND EQUIPMENT BUILDERS—

DELVAC OILS

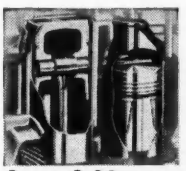
Reduce Downtime · Cut Costs

These famous heavy-duty oils for gasoline and Diesel engines give proved performance under toughest conditions . . .



. . . Keep Engines Clean

Delvac "Series 900" Oils have exceptional resistance to oxidation, are detergent and dispersive. They minimize formation of lacquer and other harmful deposits—hold contaminants in suspension until drained at regular periods. Your engines stay cleaner and run better.

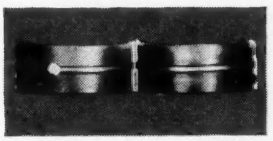


. . . Assure Full Power

Delvac "Series 900" Oils assure proper ring seal, guard against blow-by. This means more efficient compression and combustion . . . full, dependable power output . . . maximum fuel economy. Your engines last longer, cost less to run—even under toughest conditions!

. . . Protect Against Wear

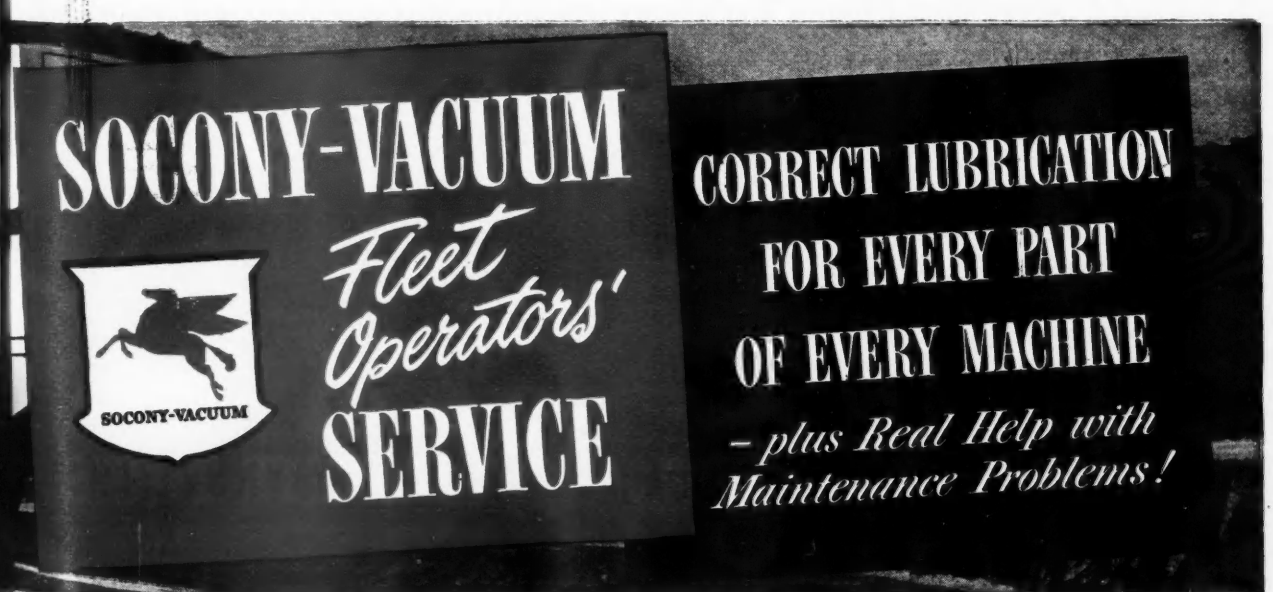
Delvac "Series 900" Oils are made from specially selected, solvent-refined base stocks that provide ample "body" under the high temperatures of heavy-duty service. Their rich lubricating films give rings, pistons, cylinders, bearings — all vital parts — full protection against wear.



. . . Prolong Bearing Life

Delvac "Series 900" Oils have high chemical stability, help protect hard alloy bearings against corrosion and wear. Bearing shown—photographed after 160,000 miles of service — is still good for thousands of miles . . . proof that Delvac Oils prolong bearing life.

SOCONY-VACUUM OIL COMPANY, INC., and Affiliates: MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP.



NOW AN EVEN *TOUGHER TIRE!*

DOMESTIC SERVICE
Check the class of service desired; otherwise this message will be sent as a full rate telegram

FULL RATE TELEGRAM | SERIAL | $
DAY LETTER | NIGHT LETTER | S
E

WESTERN UNION

JOSEPH L. EGAN, PRESIDENT

1207

INTERNATIONAL SERVICE
Check the class of service desired; otherwise this message will be sent at the full rate

FULL RATE | DEFERRED
CODE | NIGHT LETTER

NO. WDS.-CL. OF SVC. | PD. OR COLL. | CASH NO. | CHARGE TO THE ACCOUNT OF | TIME FILED

Send the following message, subject to the terms on back hereof, which are hereby agreed to

TO ALL GILLETTE SALESMEN:

WE ARE PLEASED TO ANNOUNCE THE NEW GILLETTE SUPER TRACTION FOR DOUBLE-DUTY TRUCK SERVICE. HERE IS A REAL BREAK FOR YOU AND YOUR TRUCKER CUSTOMERS. NOW YOU CAN OFFER A CUSTOM DESIGNED TIRE TO MEET THE TOUGHEST CONDITIONS A TIRE CAN UNDERGO. NOW YOU'VE GOT THE TOUGHEST TIRE WE'VE EVER BUILT. TELL YOUR PROSPECTS THE GOOD NEWS.

WILSON O. GREEN,
SALES MANAGER, GILLETTE TIRES

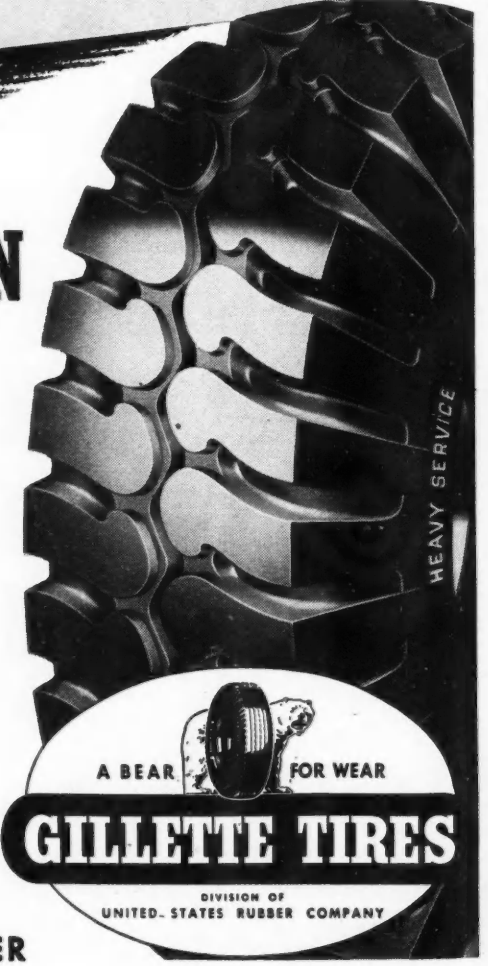
THE NEW DOUBLE-DUTY
GILLETTE SUPER TRACTION

If you've been wondering why a truck tire can't be built to do double duty, traction and mileage, then stop wondering—GILLETTE has just done it! After 10 years of research GILLETTE engineers have produced a tread design which is "tailor-made" for any kind of duty. By combining this amazingly versatile tread design with different rubber compounds and ply constructions GILLETTE can exactly meet your needs for more miles with surer traction in one super tire design — the new GILLETTE SUPER TRACTION.

Here are some of its outstanding features:

- **50% more skid depth** with minimum stone retention.
- **Flat center tread** for smooth rolling.
- **More tread surface contact** for greater mileage.
- **Braced outer bars** for firm, deep traction.
- **Curved sub-tread** for cooler operation.
- **Load-molded carcass** for maximum tire life — more re-caps.

Available in 3 different constructions.



GET ALL THE FACTS FROM YOUR GILLETTE DISTRIBUTOR TODAY

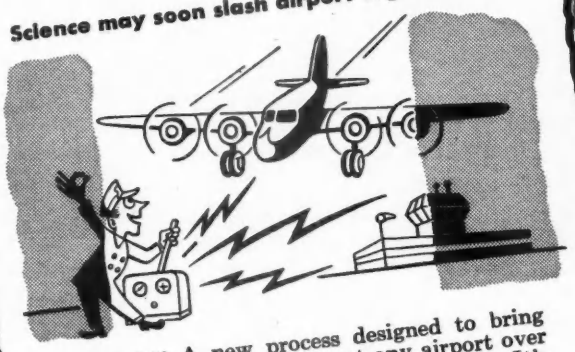
WEAR BETTER BECAUSE THEY'RE BUILT BETTER

the Doctor of Motors Rumor Page

PERFECT CIRCLE PAYS $50.00 for any Rumor accepted for this page. None can be returned or acknowledged, and all become PC's property. Address Perfect Circle Corporation, Hagerstown 6, Indiana.

IT'S RUMORED THAT

Science may soon slash airport fogs in half!



CORRECT! A new process designed to bring about a 50% fog reduction at any airport over a year's time has been tested successfully. It's said to be more effective in preventing fogs than dispersing them.

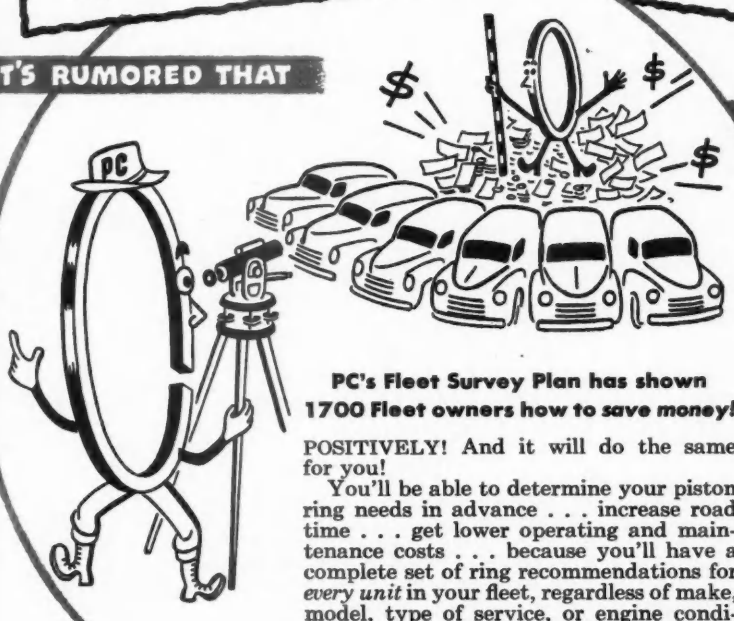
IT'S RUMORED THAT

Penny-wise motorists should buy their gasoline by the clock!

IT'S A FACT! Since gasoline expands as the temperature rises, a gallon has less actual fuel in hot weather. You make a small but definite saving when you buy it in the morning rather than afternoon. Winter gas is a better deal than summer gas, too!

—Edward Mayover, N.E. Corner 61st and Media Streets, Philadelphia 31, Penna.

IT'S RUMORED THAT



PC's Fleet Survey Plan has shown 1700 Fleet owners how to *save money!*

POSITIVELY! And it will do the same for you!

You'll be able to determine your piston ring needs in advance . . . increase road time . . . get lower operating and maintenance costs . . . because you'll have a complete set of ring recommendations for *every unit* in your fleet, regardless of make, model, type of service, or engine condition! Call your Perfect Circle Distributor, or write the Perfect Circle Corporation, Hagerstown, Indiana, for complete information.

IT'S RUMORED THAT

In the future, cities may heat their highways in winter!

COULD BE! Radiant heating of highways by electricity is being tested in one large American city. The purpose isn't motorist comfort, though — the heat keeps roads free of snow and ice!

Perfect Circle

The Most Honored Name in Piston Rings

How to maintain cleaner engines

As you know so well, it costs real money to overhaul an engine.

We therefore believe you will be interested in an oil that extends the time between overhauls . . . helps to increase availability.

Gulflube Motor Oil H.D., a heavy-duty type oil, not only provides proper lubrication but keeps engines clean as well.

To begin with, Gulflube Motor Oil H.D. has a rich paraffin base. It provides a particularly strong oil film and superior lubrication under the toughest operating conditions.

Gulflube Motor Oil H.D. is also a fully detergent motor oil. Because it helps keep rings clean and free, it insures better compression and proper oil control. The low pour point and high viscosity index of this oil assure minimum drag when starting.

To find out more about Gulflube Motor Oil H.D., and how it can help *you* maintain cleaner engines, contact your nearest Gulf Office.

The Gulf Automotive Service Engineer will gladly work hand in hand with you on problems relating to lubrication and maintenance.

Lower and lower tire-mileage costs

Tire-Mileage Costs become lower and lower when you equip with Gulf Heavy Service Tires. Two reasons why:

Weftless Cord construction throughout —a greater usable strength factor from the first mile of service *and* during the critical break-in period.

Nylon Breakers make recapping a safer investment for you. They absorb and smother bruising road shocks . . . protect the carcass cords against fatigue and breakage over unusually long periods of time.

The Full Story of improved tire mileage and lower cost is yours in a free booklet "—Gulf Truck Tire Data Book." Send for it now!

GULF

GULF OIL CORPORATION • GULF REFINING COMPANY

Gulf Building, Pittsburgh 30, Pa.
Offices in principal cities in 30 states

Announcing—ALL NEW—ALL PROVED

INTERNATIONAL TRUCKS

Every model *Heavy-Duty Engineered* to save you money!

Now International puts you squarely in the driver's seat—with a complete new line of completely new trucks!

Every single new International Truck from 4,200 to 90,000 pounds GVW is heavy-duty engineered to give you lower maintenance and operating costs.

Let the facts tell that story:

Fact No. 1: for 18 straight years Internationals have led in sales of heavy-duty trucks (16,001 pounds and over GVW). The men who buy heavy-duty trucks buy on a basis of performance. They choose Internationals.

Fact No. 2: the same management men, the same engineers, the same test experts, the same production men who kept Internationals first in the heavy-duty field, have developed *every* new International Truck.

Every model offers new high standards of comfort and easy handling

Here's relaxing roominess! Here's all 'round visibility! Here's a comfortable, adjustable seat! Yes—you get everything in the Comfo-Vision Cab!

You have full visibility in the one-piece Sweepsight windshield. That convenient two-cluster instrument panel puts everything right in front of your eyes.

And when the truck starts to roll, you find that new Super-steering right for position, and positive control.

AND TALK ABOUT FEATURES . . .

1950

Every new International Truck offers new improvements throughout!

NEW Functional Styling—Smart brawny appearance combines modern design with extreme practicability.

NEW Outdoor Visibility—Giant, one-piece scientifically curved Sweepsight windshield, large side windows, two rear windows.

NEW Comfo-Vision Cab—Model for model "the roomiest cab on the road"— with comfort cushions, adjustable seats, controlled ventilation.

NEW Super-Maneuverability—More positive control from a more comfortable position; new wide-tread axles assure the shortest practical turning circle and greater stability.

NEW Engine Accessibility—Special fender and hood design provides extra working space between engine and fenders—hoods easily removed.

NEW Valve-in-head engines—All test-proved for greater power, greater economy, greater stamina, greater efficiency.

NEW Specialized Transmissions—Types and gear ratios for any job . . . three-speed, four-speed and five-speed with direct drive or overdrive in 5th.

NEW Rear Axles for any job—Wider, sturdier rear axles—hypoid single-speed, double-reduction and two-speed with electric shift.

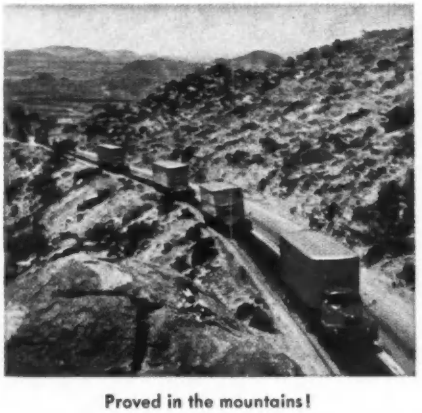
NEW Brake Systems—hydraulic or air. Faster-acting, surer-stopping, longer-wearing—more efficient braking with less effort.

NEW Steel-flex Frames—Designed to provide an extra margin of strength combined with the right amount of flexibility.

NEW Load-balanced Wheelbases—Shorter wheelbases for standard body lengths provide better load distribution, better maneuverability.

NEW Cradle-Action Springs—Longer springs for greater riding ease . . . stronger springs, sturdier mounting and new spring suspension for longer life.

Plus dozens of new features and refinements throughout every truck!



Proved in the mountains!

Proved on the Belgian Blocks!

Proved in heavy snowfall!

Proved on the twist course!

Every model proved under actual operating conditions!

There wasn't any price tag on the test program to prove the new International Trucks.

It was directed by men whose life work has been to develop better truck transportation. Test drivers were chosen as carefully as you do any key workers. All-outdoors was used for proving grounds. Laboratory analysis tests were backed up by track tests, then by actual road tests. Test convoys were run 'round the clock.

That's why every all-new, all-proved International Truck is right and ready for you *now!*

Call or visit your International Truck Dealer or Branch

International Harvester Builds McCormick Farm Equipment and Farmall Tractors . . . Motor Trucks Industrial Power . . . Refrigerators and Freezers

Tune in James Melton and "Harvest of Stars" NBC, Sunday afternoons

INTERNATIONAL TRUCKS

INTERNATIONAL HARVESTER COMPANY CHICAGO

EDITOR'S NOTE—Operation and maintenance of vehicles in municipal service presents many special problems. Harry Stiedemann has provided a rather complete picture of these problems and how they have been solved in Milwaukee. Due to the extensive information he has supplied, the data have been divided into two parts, of which this is Part 1.

CENTRALIZED Maintenance Control

Milwaukee organized a central vehicle pool, followed it up with centralized repairs and PM, coordinated all with efficient control

By Harry R. Stiedemann
Superintendent, Bureau of Municipal Equipment

TO INCREASE the use factor and insure better maintenance, most of our automotive equipment is centralized in the Bureau of Municipal Equipment. Except for fire, police and school board vehicles, the Bureau rents trucks, rollers, air compressors, cranes or business cars to other city departments on a mileage or hourly basis. We also handle the maintenance and lubrication for the police department.

Under the rental system, city departments return automotive equipment to us as soon as possible, to save money for their departments. The vehicles get better maintenance, because the men in charge are specialists whose sole responsibility is automotive equipment.

While some city departments could maintain their own vehicles, often they don't have much equipment and their personnel is made up of technicians skilled in other things such as police work, civil engineering, health or legal work. In such cases, repairing is an annoying and neglected sideline.

From experience, we know that there is much variation in the way automotive equipment is handled by various men. Thus, some vehicles will run twice as long as others just due to careful handling.

The Bureau also is very conscious of the fact that vehicle breakdowns may idle a large crew of men and other automotive equipment.

The city does not have enough automotive equipment to take care of peak loads. During the summer season, any equipment the central Bureau can't supply, is rented outside. These rental rates, of course, are a lot higher because they include all costs and a profit for the owner. The dispatcher takes care of the rentals, rather than the department needing the equipment.

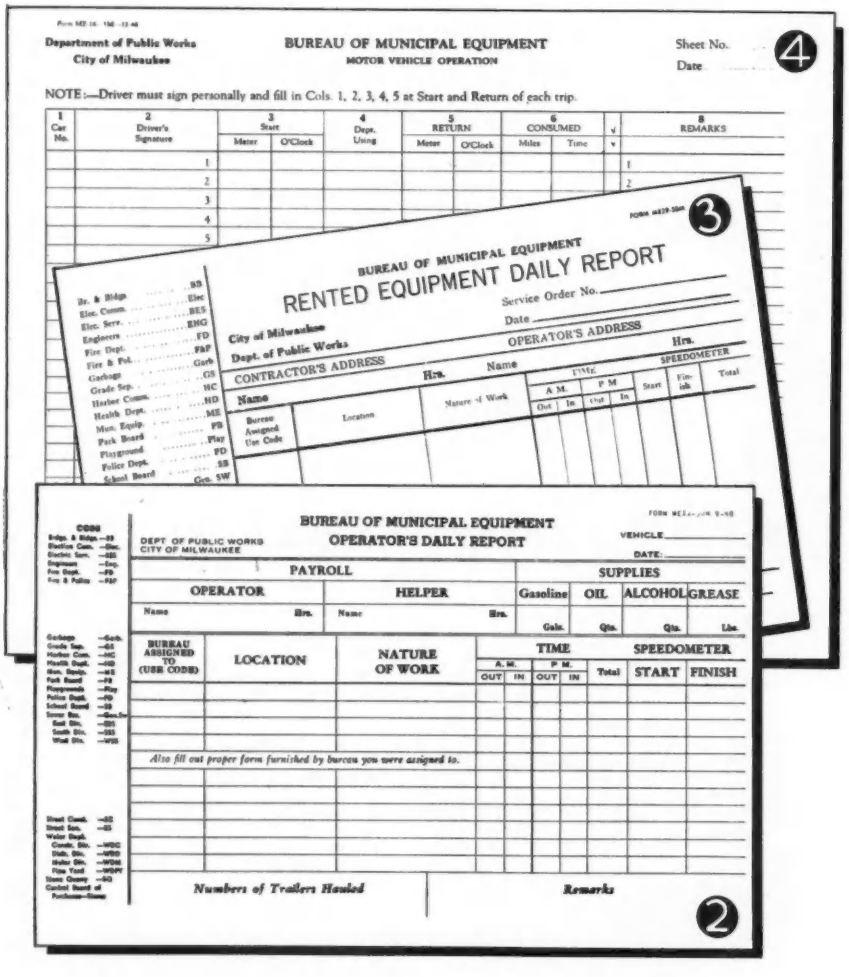
The dispatcher is located at the Central garage. When any department wants a vehicle, the dispatcher assigns it, with or without a driver.

(TURN TO NEXT PAGE, PLEASE)

Three of the many types of vehicles in Milwaukee's pool. Maintenance of these units is centralized in the Central Garage, specializing in heavy vehicles

. . . CENTRALIZED Maintenance Control

Continued from Page 69



Department of Public Works
City of Milwaukee

BUREAU OF MUNICIPAL EQUIPMENT
MOTOR VEHICLE OPERATION

Sheet No. ....
Date ....

4

NOTE:—Driver must sign personally and fill in Cols. 1, 2, 3, 4, 5 at Start and Return of each trip.

1 Car No.	2 Driver's Signature	3 Start: Meter	3 Start: O'Clock	4 Dept. Using	5 RETURN: Meter	5 RETURN: O'Clock	6 CONSUMED: Miles	6 CONSUMED: Time	√	8 REMARKS
	1									1
	2									2
	3									
	4									
	5									

3

BUREAU OF MUNICIPAL EQUIPMENT
RENTED EQUIPMENT DAILY REPORT

Service Order No. ....
Date ....
City of Milwaukee
Dept. of Public Works
CONTRACTOR'S ADDRESS
OPERATOR'S ADDRESS

Name	Location	Nature of Work	Time A.M. Out	Time A.M. In	Time P.M. Out	Time P.M. In	Hrs.	SPEEDOMETER Start	SPEEDOMETER Finish	SPEEDOMETER Total
Bureau Assigned Use Code										

Dr. & Bdgs. ..... BB
Elec. Comm. ..... Elec
Elec. Serv. ..... BES
Engineers ..... ENG
Fire Dept. ..... FD
Fire & Pol. ..... FAP
Garbage ..... Garb
Grade Sep. ..... GS
Harbor Comm. ..... HC
Health Dept. ..... HD
Mun. Equip. ..... ME
Park Board ..... PB
Playground ..... Play
Police Dept. ..... PD
School Board ..... SB
Gen. SW

BUREAU OF MUNICIPAL EQUIPMENT
OPERATOR'S DAILY REPORT

DEPT. OF PUBLIC WORKS
CITY OF MILWAUKEE

VEHICLE ....
DATE: ....

PAYROLL: OPERATOR Name	Hrs.	HELPER Name	Hrs.	SUPPLIES: Gasoline Gals.	OIL Qts.	ALCOHOL Qts.	GREASE Lbs.

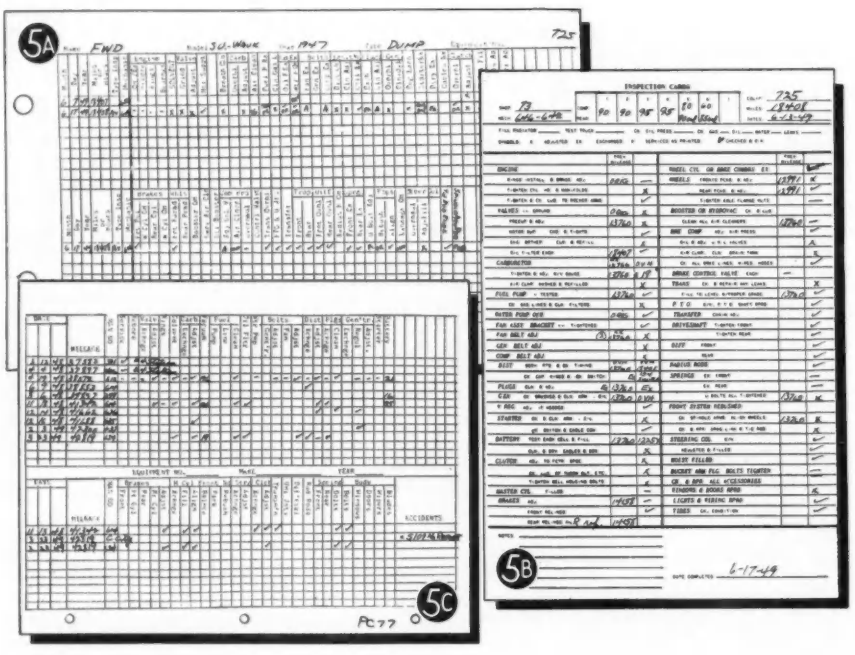
BUREAU ASSIGNED TO (USE CODE)	LOCATION	NATURE OF WORK	TIME A.M. OUT	TIME A.M. IN	TIME P.M. OUT	TIME P.M. IN	Total	SPEEDOMETER START	SPEEDOMETER FINISH
		Also fill out proper form furnished by bureau you were assigned to.							

Numbers of Trailers Hauled

Remarks

2

CODE
Bdgs. & Bdgs. —BB
Electric Comm. —Elec.
Electric Serv. —BES
Engineers —Eng.
Fire Dept. —FD
Fire & Police —FAP
Garbage —Garb.
Grade Sep. —GS
Harbor Com. —HC
Health Dept. —HD
Mun. Equip. —ME
Park Board —PB
Playgrounds —Play
Police Dept. —PD
School Board —SB
Gen. Sw.
Sewer Div. —SES
East Div. —SED
South Div. —SSS
West Div. —SWS
Steel Const. —SC
Street San. —SS
Water Dept.
Constr. Div. —WDC
Distr. Div. —WDD
Meter Div. —WDM
Pipe Yard —WDPY
Sewer Constr. —SC
Central Board of Purchases—Stores



5A

Make FWD Model 36-WAUK Year 1947 Type DUMP 725

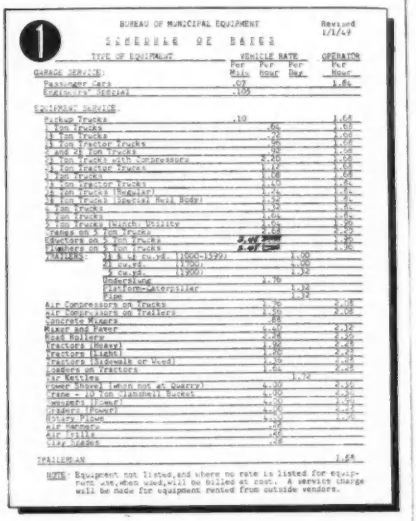
INSPECTION CARD

5B

5C

FC77

LEFT. These three forms are used t keep track of rented vehicles. Fig. is used when vehicle is rented wi an operator, Fig. 3, without operato Lubrication and PM checks can l controlled by referring to Figs. 2 an 4, the latter being a driver sign-out sheet. Figs. 2 and 3 measure 6 x 9½ in. Dimensions of Fig. 4 are 8½x10¾



1

BUREAU OF MUNICIPAL EQUIPMENT
SCHEDULE OF RATES
Revised 1/1/49

TYPE OF EQUIPMENT	VEHICLE RATE Per Week	VEHICLE RATE Per Hour	OPERATION Per Day	OPERATION Per Hour
GARAGE SERVICE:				
Passenger Cars	.07			1.84
Chauffeurs' Service	.109			
EQUIPMENT SERVICE:				
Pickup Trucks	.10			1.68
½ Ton Trucks		.04		1.70
¾ Ton Trucks		.04		1.70
1 Ton Tractor Trucks		.07		1.70
1 and 2½ Ton Trucks		.10		1.70
2½ Ton Trucks with Compressors		.20		1.70
4 Ton Tractor Trucks		.17		1.70
4 Ton Trucks		.14		1.68
4 Ton Service Trucks		.14		1.70
5 Ton Trucks (Tandem)		.24		1.70
5 Ton Trucks (Semi-Van Body)		.24		1.70
6 Ton Trucks		.14		1.70
6 Ton Trucks		.24		1.70
6 Ton Trucks (with Hoist)		.24		1.70
Cranes on 5 Ton Trucks		.24		1.70
Shovels on 5 Ton Trucks		.24		1.70
Ditchers on 5 Ton Trucks		.24		1.70
TRAILERS:				
2 Wheel (Under 1500 lbs. Capacity)				1.00
2 Wheel (1500 to 3500 lbs. Capacity)				1.00
2 Wheel (4000 lbs. Capacity)				1.10
Underslung		.16		1.70
Concrete Mixer on Trailer				1.70
Air Compressors on Trucks		.20		2.40
Air Compressors on Trailers		.20		2.40
Concrete Mixers		.25		2.40
Mixer and Paver		.40		2.70
Road Rollers		.20		2.40
Tractors (Heavy)		.26		2.40
Tractors (Light)		.20		2.40
Tractors (Skidmobile or Wood)		.20		2.40
Ladders on Tractors		.10		2.40
Air Keglers		.12		2.40
Power Shovel (with out at Quarry)		.40		2.70
Crane - on 10 ton Industrial Tractor		.40		2.70
Dragline (Crane)		.40		2.70
Clamshell (Crane)		.40		2.70
Rotary Plows		.20		2.40
Air Impacts		.10		
Air Grinders		.10		
Clay Diggers		.40		
TRAILERMAN				1.69

NOTE: Equipment not listed, and where no rate is listed for equipment use, when used, will be billed at cost. A service charge will be made for equipment rented from outside vendors.

FIG. 1. The rental rate structure used by Milwaukee. These rates, adjusted annually, were in effect during 1949

If he hasn't the exact equipment, he questions the use to which it is to be put and, often, is able to substitute something just as suitable. In other words, he is more than an office man —he knows all city operations, where each piece of equipment is, and approximately how long it will be needed.

PM is Centralized

AN IMPORTANT part of centralization is the Bureau's preventive maintenance program, which is designed to reduce the number of service breakdowns and prevent expensive repairs due to neglect. The Bureau tries to give each of the 1600

LEFT. Mineographed forms, such as these, are used for every vehicle. Fig. 5A, 8½ x 14, is a history sheet for heavy trucks. Fig. 5B, 8½ x 12¾, is an inspection sheet for heavy trucks. Fig. 5C, 8½ x 11, gives a history of light truck and passenger car repairs

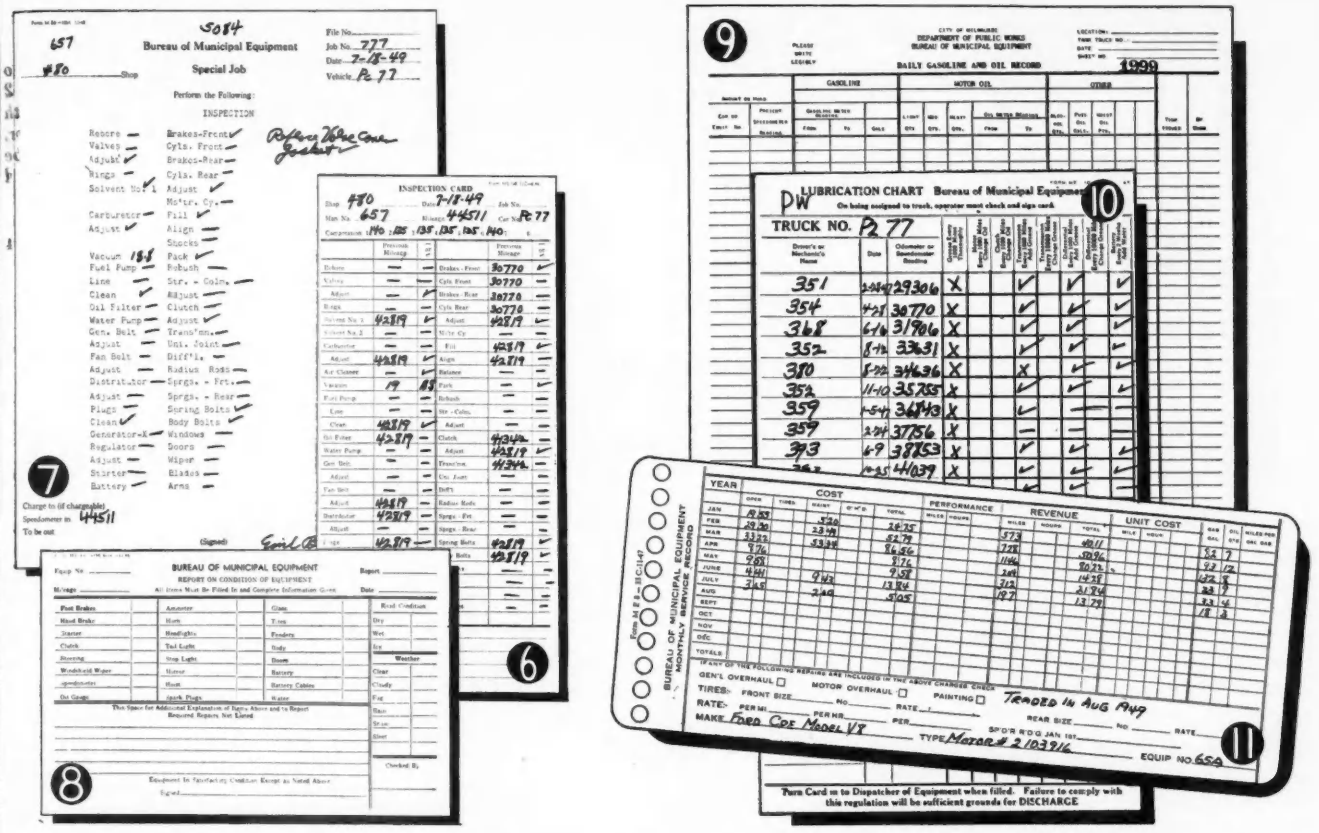

Bureau of Municipal Equipment
Special Job
INSPECTION
INSPECTION CARD
BUREAU OF MUNICIPAL EQUIPMENT
REPORT ON CONDITION OF EQUIPMENT
CITY OF MILWAUKEE
DEPARTMENT OF PUBLIC WORKS
BUREAU OF MUNICIPAL EQUIPMENT
DAILY GASOLINE AND OIL RECORD
LUBRICATION CHART Bureau of Municipal Equipment
TRUCK NO. P 77
BUREAU OF MUNICIPAL EQUIPMENT
MONTHLY SERVICE RECORD
COST
PERFORMANCE
REVENUE
UNIT COST
TRADED IN AUG 1949
MAKE FORD COE MODEL V8
EQUIP NO. 654
Turn Card in to Dispatcher of Equipment when filled. Failure to comply with this regulation will be sufficient grounds for DISCHARGE

FIG. 6, 4⅜ x 10, is an inspection card for passenger cars and light trucks. Fig. 7, 8½ x 11, job record sent to police department. Fig. 8, 5 x 8, driver's report

FIG. 9, 8½ x 11, oil, alcohol and gas record used by the pump attendant. Fig. 10, 6 x 10, lubrication record used for every vehicle. Fig. 11, 4¼ x 10½, cost control record

pieces of equipment a check-up every 5000 miles, or every six months.

Due to a shortage of help, extra work of various kinds and vacations, this isn't always possible but the program has eliminated about 75 per cent of the service calls experienced prior to centralized maintenance. Just to cite one example of the low rate of road calls we now have, William Riordan, superintendent of our Market Street garage, reports that he gets about two mechanical and about two electrical calls per week for the 102 police cars on the road 24 hours a day.

While a lot of service calls have been eliminated, we find it desirable to have three field service men, in different sections of the city, for supervision, service, and observation and correction of operating methods which cause unnecessary work.

Age of equipment, amount of street construction and the weather vary the number of service calls. Because older equipment, first coming under the preventive program takes longer than normal, Central garage isn't down to the 5,000-mile mark as yet. They hope to be in the very near future.

William Riordan, Mechanic Supervisor, studies a vehicle's history record to determine extent of needed repairs

PM Control Forms Specialized

SEVERAL methods of keeping track of rented equipment and for preventive maintenance purposes have been devised. Some trucks and equipment are rented with operators. Sometimes only equipment is furnished. Figs. 2 and 3 show the rental forms.

Some cars are kept in the city garages and signed for by engineers and technicians when they are taken out. Others are permanently assigned to city officials who keep them at home. Equipment such as trailers may be stored at ward yards or at various dumps. Rollers or air compressors may be on one job for weeks at a time.

All automotive vehicles are equipped with odometers. The newer air compressors have hour indicators, some older ones do not.

Preventive maintenance and lubrication of cars stored at the city garages can be kept track of from either the daily truck driver reports or from the sign-out sheet. Fig. 4, which contains the car number, driver's signature, in-and-out times,

(TURN TO PAGE 123, PLEASE)

Arthur C. Butler

Legislative Outlook f

Proposed Federal legislation, especially the Bills on Federal highway aid and repeal of excise taxes, hold the spotlight, but much important legislation affecting trucking will be considered by 13 states

By Arthur C. Butler
Director, National Highway Users Conference

SIGNIFICANT legislative problems will confront the highway user in 1950 not only in the state legislatures meeting in regular or special session but also in the U. S. Congress.

Two issues before the U. S. Congress of paramount interest will be the repeal or reduction of the Federal automotive excise taxes and Federal highway aid legislation.

Automotive Excise Taxes

SINCE the termination of the war emergency, highway user groups have called upon Congress for relief from the Federal automotive excise taxes on motor vehicles and trailers, gasoline and lubricating oil, tires and tubes, and automotive parts and accessories. Repeal of these levies, which were originally enacted in 1932 as emergency taxes for a temporary period to provide general revenue and were subsequently increased during the war emergency, is proposed in a bill, H.R. 4489, introduced by Representative Thomas Martin of Iowa at the last session of Congress.

According to press reports, the present session of Congress will thoroughly discuss overhaul of the entire Federal excise tax structure. Everything one reads indicates that some relief will be granted on the taxes on various luxuries, but not much attention is given to the taxes on automobiles and gasoline. If relief from the Federal automotive excises is to be accomplished at any time in the near future, it would appear that the present session of Congress offers the best opportunity since its decisions will have a strong bearing on the Federal excise tax question for some time to come. Relief at this Congress can only be secured through a vigorous nationwide effort carried on not only by highway users but also by public officials and others interested in sound highway policies.

Federal Highway Aid

PROFOUND questions as to the role of the Federal government in the highway field will underlie consideration of legislation to become the Federal Aid Act of 1950. Trends already in progress expanding Federal activities in the highway field, as well as proposals for substantial increases in the amount of Federal aid and for deviation from the customary 50-50 matching, raise fundamental questions as to the apparent departure from traditional Federal aid policy which has been based upon the constitutional obligation to provide highway grants-in-aid from general tax revenues. Increasing support for linking the amount of Federal aid grants with the yield of the Federal automotive excise taxes also has an important effect on the possibility of relief from these discriminatory taxes.

The decisions taken in the 1950 Highway Act may strongly influence the accepted pattern of road management in which the states have enjoyed proprietorship with the Federal government in the role of a coordinating agency dealing with highways of nationwide significance rather than all the roads in the country.

The State Picture

AT LEAST 13 state legislatures will be meeting in 1950, and highway-user interest will be focused on important bills in many of them.

Measures dealing with the need for long-range planning to satisfy highway needs; curbs on diversion of highway use taxes to non-highway purposes; closer conformity of state laws to the provisions of the model national Uniform Vehicle Code—all will get attention in some of these sessions.

Long-range highway programs, or plans for them, will be considered in Kentucky and Rhode Island, and restudied in Mississippi. In the latter, a special session in 1949 failed to reach agreement on a report of the Legislative Highway Planning Committee. Other states also may get ofcial studies designed to determine highway needs on a long-term basis.

ok for 1950

Also a summary of legislation affecting truck transportation passed last year by the States

Highlights of Proposed Legislation

FEDERAL LEGISLATION—A bill (H.R. 4489) introduced at the last session of Congress proposed repeal of certain automotive excise taxes. This and the entire Federal excise tax structure will get thorough consideration. Federal highway aid legislation also is due for a thorough overhaul.

STATE LEGISLATION—At least 13 state legislatures will be meeting in 1950, and highway-user interest will be focused on important bills in many of them.

HIGHWAY PLANNING—Long-range highway programs, or plans for them, will be considered in Kentucky and Rhode Island, and restudied in Mississippi.

ANTI-DIVERSION BILLS — Increased activity for Anti-Diversion Bills is expected this year by user groups, particularly in the southern states. In Rhode Island, a bill is proposed to put a statutory limit on diversion.

UNIFORM LAWS—Highway user groups in a number of states are active in promoting uniform vehicle laws. Corrective legislation is likely in six states.

OTHER LEGISLATIVE POSSIBILITIES—Bills are pending to reduce fuel taxes in some states and increase them in others. Repeal of gross receipts tax laws, closer examination of applicants for operator's licenses, axle weight limitations, compulsory motor vehicle inspection, certification of titles, and other types of automotive vehicle and use legislation are proposed in the various states.

Anti-Diversion Bills

THE year also will see increased activity by user groups toward eliminating diversion of highway funds, particularly in the southern states. In Louisiana, a constitutional convention may be called. If it is, users will press for submission to the voters of an anti-diversion amendment. Anti-diversion amendments are also expected to be introduced in Mississippi, Virginia, New York, and probably New Jersey.

In Rhode Island, a bill is proposed to put a statutory limit on diversion. Large sums of highway use taxes have been used in recent years in the three latter states for non-highway purposes. Tennessee voters will have the chance at the 1950 general election to adopt a constitutional amendment against diversion. Twenty-one states have such a constitutional safeguard of highway monies.

Uniform Vehicle Laws

HIGHWAY user groups have been active in promoting uniform vehicle laws in a number of states whose legislatures are meeting in 1950. Corrective legislation is likely in Kentucky, Louisiana, Mississippi, South Carolina, Massachusetts and Virginia.

These are the states having regular legislative sessions:

California	March 6
Kentucky	January 3
Louisiana	May 8
Maryland	February 1
Massachusetts	January 4
Mississippi	January 3
New Jersey	January 10
New York	January 4
Rhode Island	January 3
South Carolina	January 10
Virginia	January 11

In addition, legislatures in Georgia and Missouri will reconvene early in 1950. In California and Maryland the subjects are limited to budgetary, revenue and emergency laws.

A number of special sessions are also expected during the year, although these are usually limited to subjects in the governors' calls. At the present time, special sessions seem likely in Idaho, Michigan, New Hampshire, South Dakota, Texas and Wyoming.

State-by-State Outlook

THE following subjects seem likely to be considered in those states having regular sessions of the legislature.

CALIFORNIA—A measure to repeal gross receipts tax on for-hire carriers and increase truck registration fees may be introduced.

KENTUCKY—Amendment of the motor vehicle laws to conform closely with Acts II and V of the Uniform Code; Uniform Certificate of Title Law; attempts to publicize plans of the Highway Department; toll road proposals.

LOUISIANA—Bills to reduce the present 9-cent gasoline tax rate; recoupment of highway funds previously diverted for other purposes; amendments to motor vehicle laws to make them conform more closely to the Uniform Code.

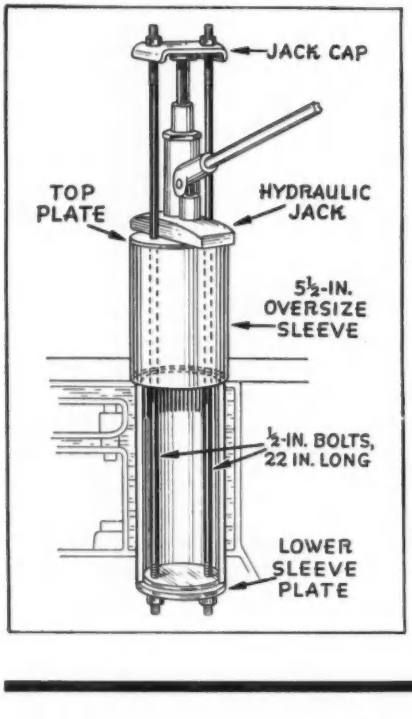
MARYLAND—Bills to provide for closer examination of applicants for operators' licenses in the age group between 16 and 21 years; to provide for inspection of motor vehicles at state-operated inspection stations; roadside zoning.

MASSACHUSETTS — Numerous proposals to increase the gasoline tax; bill for a study of motor vehicle laws to make them conform more closely with the Uniform Code; re-

(TURN TO PAGE 146, PLEASE)

Shop hints from FLEET S

$25 Hint of the Month ★



SLEEVE PULLER

by Henry Small
International Harvester Co.
Long Beach, Cal.

Here is a sleeve puller which I worked up for the boys to take the place of the original tool using an eye bolt and nut. The new puller is faster and does a satisfactory job.

Parts required for this tool are: small hydraulic jack, an oversize sleeve 5½ in. in diameter and 8 in. long, steel plate to fit lower sleeve lip, two ½-in. threaded rods 22 in. long, cap for jack saddle.

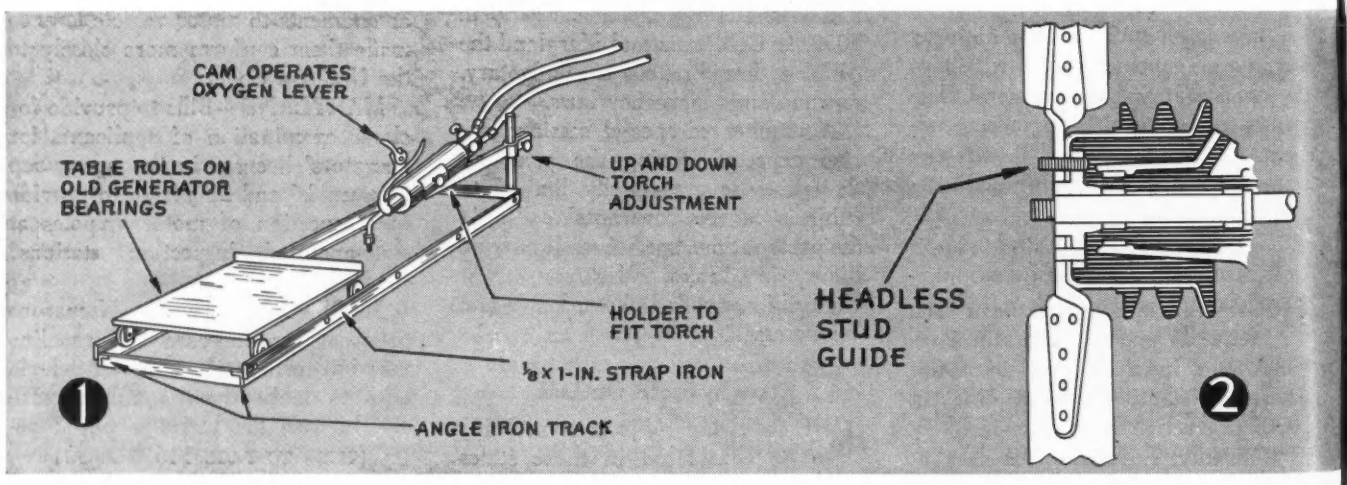
The oversize sleeve is placed over the block, bolts are positioned in the lower sleeve plate, the top plate is set over the sleeve and a jack is set on it. The cap is positioned over the jack and the bolts turned down to a snug fit. A few strokes of the handle will loosen any sleeve.

1. Cutting Torch Holder

by Roland Brunette
Chair City Motor Express Co.
Sheboygan, Wis.

Here is a sketch of a device I made for the welder. This cutting torch holder makes it easy for anyone to make a straight, smooth cut without having to grind the finished job.

The rack is made of 1-in. angle iron placed as shown. The side guides are made of ⅛ x 1-in. strap iron bolted to the flat side of the angle iron. This track can be as wide or as long as desired. The table is a flat piece of sheet steel with four supports to which are mounted old generator bearings. This rolling assembly makes it possible to place the work in any position for cutting.



T SHOPS

$25 FOR THE BEST HINT PUBLISHED EACH MONTH • • •

$5 FOR ALL HINTS PUBLISHED EACH MONTH

2. Water Pump Tip

by Seth W. Johnson
Ward Trucking Corp.
Altoona, Pa.

When replacing the water pump assembly on GMC trucks and the General Motors line of cars, mechanics experience a great deal of difficulty in aligning the pump shaft, the fan pulley and the fan blades. It is hard to start the first stud in the shaft due to the fact that the pump sits in an inaccessible position.

Here's the way to do this quickly. Saw the head off a stud of similar size and thread both ends. Start this stud first; then you can line the others up. Simply use a nut and washer on the modified stud. This is an old trick, but it's worth considering on this assembly.

3. Tire Mounting Tool

by Ray Crider
Ward Trucking Co.
Altoona, Pa.

Here is a handy tool for mounting 10:00 x 20 tires on the new type RS rims. Cut a piece of 4-in. channel iron to a length of 24½ in. and weld a ⅝ x 15-in. threaded rod to the center as shown. Cut another piece the same length, drill a hole in the center, weld flat stock to ends for guides.

With a tire placed over this clamp and the wing nut turned down, lock rings can be installed with no trouble.

4. Dual Tire Jig

by Geo. F. Burnley
Valley Vista, Cal.

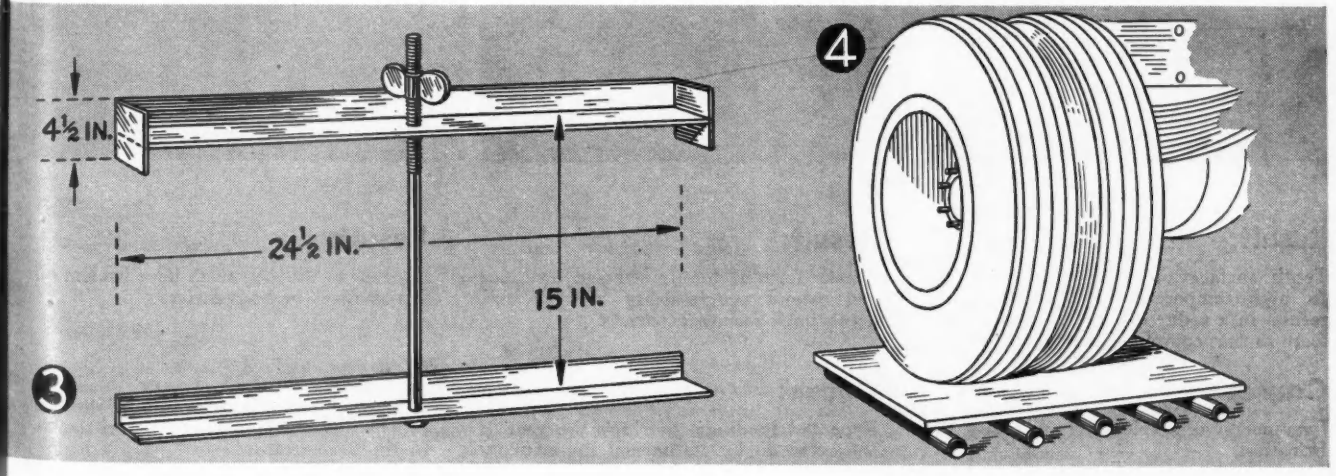
To remove a set of heavy truck duals try the following method: Jack up the truck and lay several lengths of 1½-in. diameter pipe under the wheels and parallel to the truck. Lay a wood plaform over the pipes and lower the vehicle just enough to take the weight off the duals. Remove the lugs and you can roll out the whole assembly without lifting a pound.

5. Tip for Soldering

by Harry Mayover
Philadelphia, Pa.

With many different alloys in use on metal automotive parts, it is difficult to do a good soldering job.

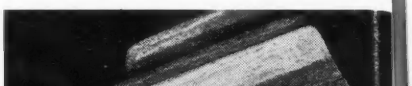
Most of these problem jobs can be done if the surfaces are first swabbed with a solution made by dissolving a few crystals of copper sulphate (about 2 oz) in a pint of water. Brush it on, let dry; then solder as usual.



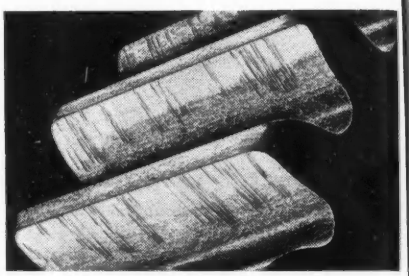
MURDER
In the Fleet Field
. . . . the Victim

GEAR TEETH

Presented on these pages are illustrations showing effects of poor gear material or careless operating conditions. In general these views are descriptive of the damages to gear teeth although in diagnosing failures the operator should be careful to consider all factors which might contribute to the condition, i.e., tooth adjustment, shaft alignment, loads, vibration, speed, temperature and lubrication. Photographs and information was supplied by the American Gear Manufacturers Association.



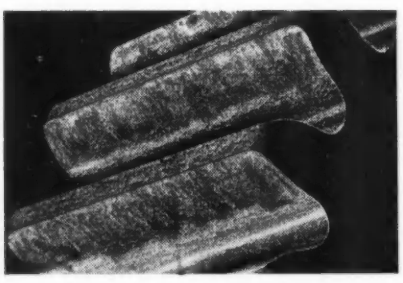
Effect:
Abrasion



Result:
Scratch marks are distributed over the tooth surface in a parallel formation. Tooth surface wears away at a comparatively rapid rate.

Cause:
Lack of proper lubrication. May be caused by the presence of foreign particles such as dirt, grit or metallic particles in the lubricant.

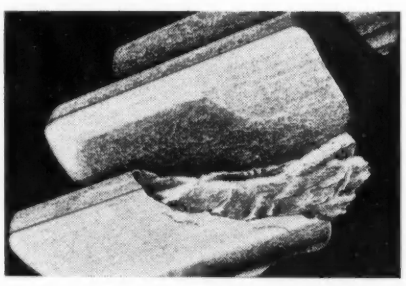
Effect:
Burning



Result:
Tooth surfaces become discolored due to high temperature conditions. This results in a reduction of hardness of the teeth so that complete failure will follow.

Cause:
Overspeeding, overloading or faulty lubrication.

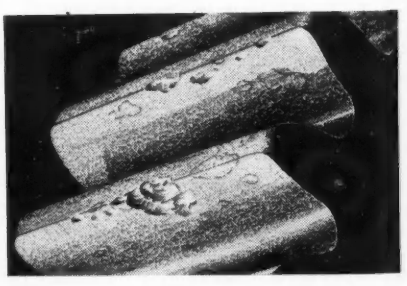
Effect:
Fatigue and Breakage



Result:
Cracks form at highly stressed locations and extend progressively in area and depth until failure occurs.

Cause:
Repeated loadings to which the gear is subjected during its normal life span.

Effect:
Chipping or Spalling



Result:
Portions of the gear teeth have broken off at the edges or boundaries.

Cause:
Under normal operating conditions this can be attributed to excessive brittleness of the gear teeth.

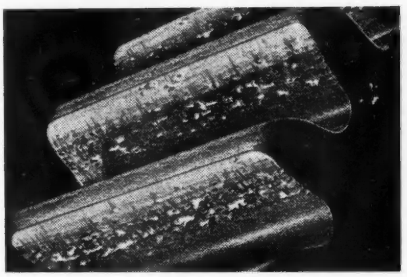
(Left)

Cause:

Normal Wear

Result:

Working surfaces of teeth have become polished due to the sliding and rolling action. After this initial break in, wear practically ceases if working conditions are proper.



(Left)

Effect:

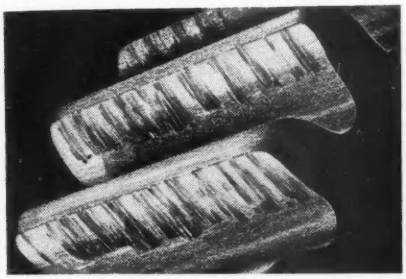
Progressive Pitting

Result:

Advanced stages of pitting destroy tooth shape, resulting in complete failure with continued operation at high load and high speed.

Effect:

Scoring



Result:

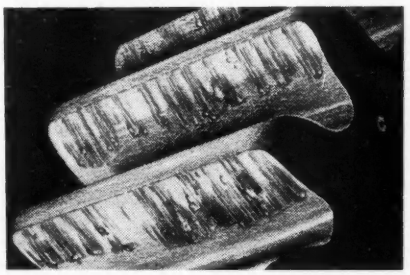
Tooth surface may be roughened only in small areas and on the same position on all teeth. Disintegration of the surfaces will follow.

Cause:

Excessive loading, inadequate lubrication and any condition permitting metal-to-metal contact.

Effect:

Galling



Result:

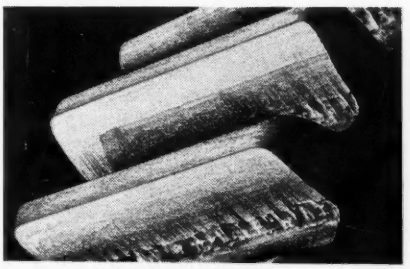
An advanced for mof scoring resulting from particles of metal being torn out from tooth surfaces in a manner sometimes referred to as seizing and welding.

Cause:

This condition is more likely to occur when two comparatively soft gears of the same hardness are operated together under heavy load conditions.

Effect:

Gouging



Result:

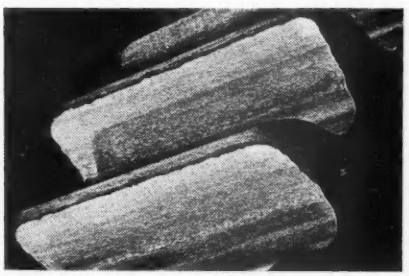
Top edges of the gear teeth may dig into the metal near the roots of the pinion teeth. A similar effect may occur between the edge of a hardened worm thread and the teeth of a worm gear.

Cause:

Interference between the flank of the driving pinion and the tip of the driven gear.

Effect:

Rolling and Peening



Result:

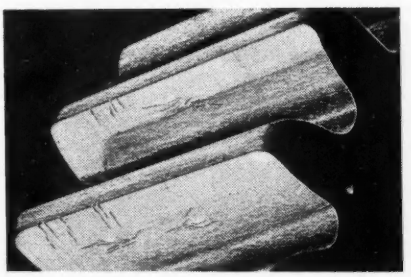
Sometimes slight "fins" form at the top edges and ends of the teeth. Plastic flow takes place.

Cause:

Rolling is caused by heavy, continuous loading with gears of insufficient hardness. Peening is caused from intermittent loads transmitting "hammer blows" to the teeth.

Effect:

Cracking and Checking



Result:

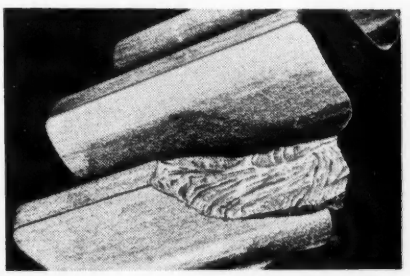
Single or scattered cracks occur in tooth surface, while numerous and closely grouped checks appear.

Cause:

Cracking is caused by loading and lubricating conditions permitting excessive temperature fluctuations, and also from excessive hardness of the gears.

Effect:

Overload and Breakage

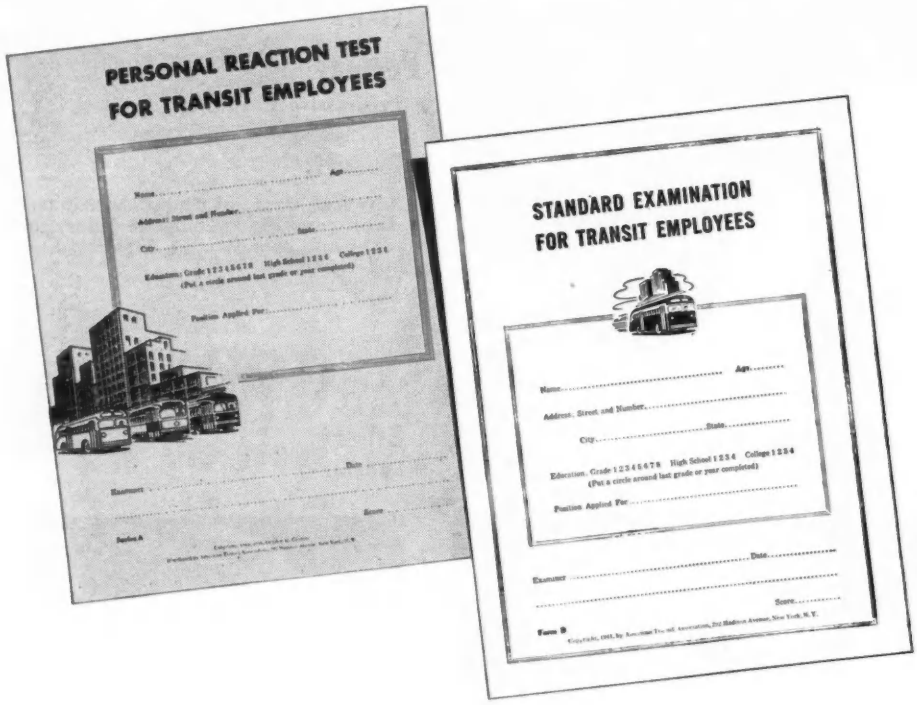


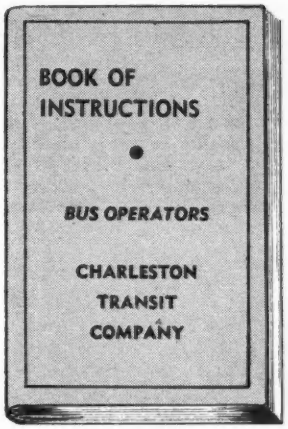
Result:

Gear tooth may be cracked or broken; the pattern will vary with the type of gear and the load. Sometimes whole teeth may be torn off.

Cause:

High stresses due to shock or overload. Surface of the fracture follows a completely different pattern from that caused by fatigue.





Facsimile of vest-pocket book on instructions given to each driver to insure thorough understanding of driver responsibilities and company policy. LEFT. Front covers of two examination forms produced by the American Transit Assn. and used by the Charleston Transit Co.

CHARLESTON "Rides with the Stars"

West Virginia property's driver safety program cuts accidents, maintenance, costs, and provides top public relations material

By R. F. Randolph, Executive Vice President, Charleston Transit Co., Charleston, W. Va.

YOUR DRIVER SAFETY AWARD plan, the annual climax of our safety program, has many advantages. It is continuous. Every driver can be a winner. It requires little or no supervision.

It keeps our accident rate down, and our insurance premiums in line. Vehicle maintenance due to accidents, especially body work, is held in check. It provides excellent material for good public relations.

Finally, after awards are made, there is no let-down period. In fact, the reverse is true. It seems to develop high resolve in every driver to be a winner next time.

The part we like best—and the safety award winners do, too—is that not only our organization but all of Charleston, and surrounding communities, know who the winners are. Their pictures are published by us in a full-page newspaper advertisement at the end of each year.

The winners receive congratulations from the riders. The losers—indicated only by the absence of their pictures — get some good-natured ribbing.

Six-Point Safety Program

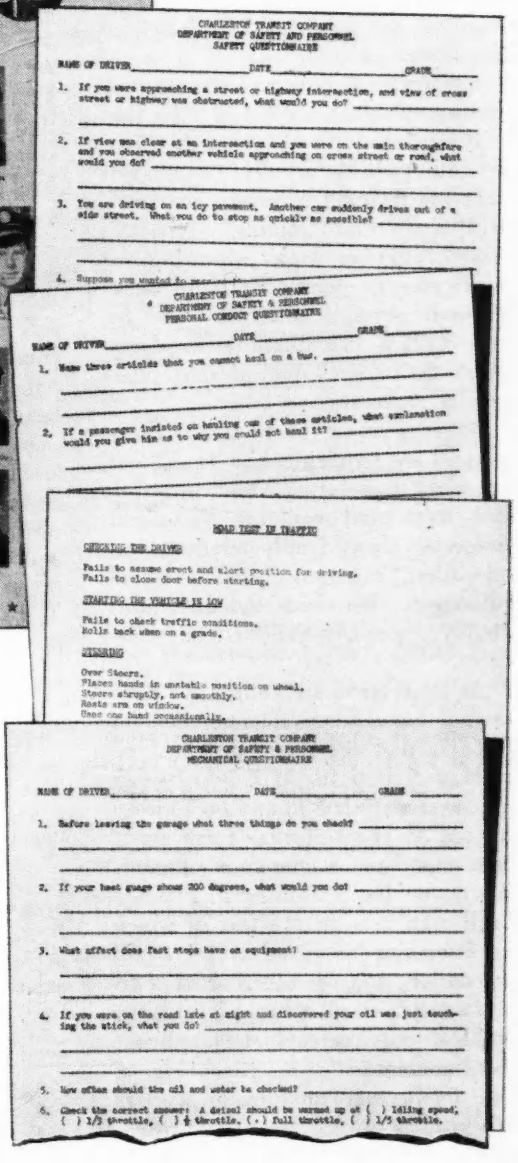
OUR safety program is simplicity itself. It consists of six parts, each so closely related that they overlap. They are as follows:

1. Driver qualification.
2. Driver training.
3. Periodic checks.

SERVING CHARLESTON AND THE GREAT MAGIC VALLEY!
You Ride When You
With The Stars Go By Bus
7 Years of Star Driving
6 Years of Star Driving
5 Years of Star Driving
A TRIBUTE TO MEN WHO HAVE DONE AN OUTSTANDING JOB
4 Years of Star Driving
3 Years of Star Driving
2 Years of Star Driving
Their 1948 Record Makes These Men Star Drivers
You Go Safely When You Go By Bus

It's hard to imagine a better planned public relations program than one telling the community that the drivers of the buses on which they ride have won safety awards; that many have unbroken safety records for a number of years. The effect on the drivers also is tremendous. Winners receive congratulations from their riders; losers, indicated only by the absence of their pictures, get a lot of good-natured ribbing

Thoroughness of training is the key to this program. Drivers must prove they have absorbed what management considers essential. Typical examination forms, 8½ x 11 in, are shown below



CHARLESTON TRANSIT COMPANY
DEPARTMENT OF SAFETY AND PERSONNEL
SAFETY QUESTIONNAIRE

NAME OF DRIVER _____ DATE _____ GRADE _____

1. If you were approaching a street or highway intersection, and view of cross street or highway was obstructed, what would you do? _____
2. If view was clear at an intersection and you were on the main thoroughfare and you observed another vehicle approaching on cross street or road, what would you do? _____
3. You are driving on an icy pavement. Another car suddenly drives out of a side street. What you do to stop as quickly as possible? _____
4. Suppose you wanted to pass a [illegible]

CHARLESTON TRANSIT COMPANY
DEPARTMENT OF SAFETY & PERSONNEL
PERSONAL CONDUCT QUESTIONNAIRE

NAME OF DRIVER _____ DATE _____ GRADE _____

1. Name three articles that you cannot haul on a bus. _____
2. If a passenger insisted on hauling one of these articles, what explanation would you give him as to why you could not haul it? _____

ROAD TEST IN TRAFFIC

MEETING THE DRIVER

Fails to assume erect and alert position for driving.
Fails to close door before starting.

STARTING THE VEHICLE IS LOW

Fails to check traffic conditions.
Rolls back when on a grade.

STEERING

Over Steers.
Places hands in unstable position on wheel.
Steers abruptly, not smoothly.
Rests arm on window.
Uses one hand occasionally.

CHARLESTON TRANSIT COMPANY
DEPARTMENT OF SAFETY & PERSONNEL
MECHANICAL QUESTIONNAIRE

NAME OF DRIVER _____ DATE _____ GRADE _____

1. Before leaving the garage what three things do you check? _____
2. If your heat gauge shows 200 degrees, what would you do? _____
3. What effect does fast stops have on equipment? _____
4. If you were on the road late at night and discovered your oil was just touching the stick, what you do? _____
5. How often should the oil and water be checked? _____
6. Check the correct answer: A diesel should be warmed up at ( ) Idling speed, ( ) 1/3 throttle, ( ) ½ throttle, ( ) Full throttle, ( ) 1/3 throttle.

4. Poster reminders.
5. Driver reports.
6. Annual awards.

Our uniformed supervisor acts as safety supervisor and is responsible for training and driver instruction. This supervisor reports to the Asst. Supt. of Transportation—Personnel.

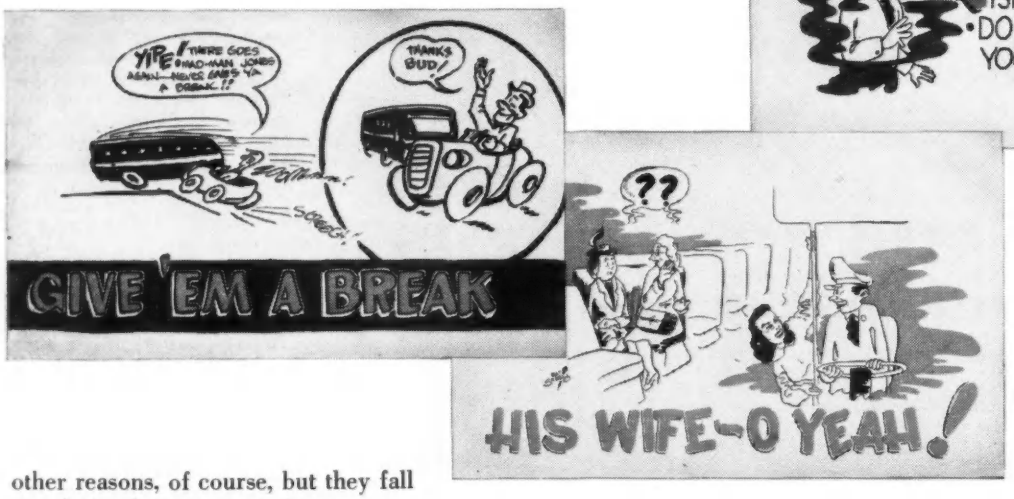
Driver Qualification

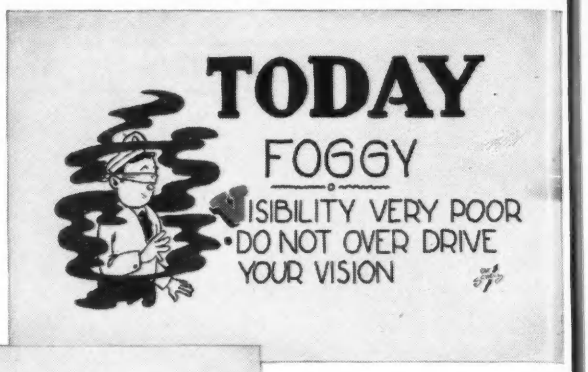
A SAFETY program has two strikes against it if the drivers will not cooperate, if they are unsuited for the job or if they are improperly trained. There can be

(TURN TO NEXT PAGE, PLEASE)

. . . "Rides with the Stars"

Continued from Page 79





Posters are used to keep drivers on their toes. Messages are short, treatment is humorous. Schoolboy artists make the posters, for a nominal sum, from ideas supplied by management

other reasons, of course, but they fall mostly in the category of poor management and have nothing to do with the driver himself.

To insure the success of our program, we select a type of man that will like his jobs well enough to cooperate wholeheartedly, who will take his training seriously, and who will apply that training conscientiously. This we do by screening the applicants to determine their background, physical suitability and by two written examinations to determine their psychological and intellectual makeup.

We determine each man's background by requiring him to fill out an application form. This is a standard form and contains the usual questions about family relationships, education, experience and personal references. We check the data thoroughly, especially the personal references.

As to physical suitability, we have several basic requirements. One of these is that the applicant must be at least 5 ft 9 in. in height, weigh approximately 165 lb and be between 23 and 35 years of age. Each applicant must have a chauffeur's license. We do no basic training in driving. Each man gets an eye test in which we determine his visual acuity, depth perception, and the other usual tests.

Having passed these preliminary physical requirements, the applicant then is screened for his psychological and intellectual qualifications. For this purpose we use two forms which we procure from the American Transit Association. These measure the applicant's personal reaction to situations encountered in handling his vehicle and passengers in the course of a day's work, and his IQ.

The answers to the personal reaction test furnish us with a key to the applican't ability to handle himself properly under normal operating conditions. Our standard for normal operating conditions includes the full range of situations encountered by a driver throughout his work day. The situations include conditions encountered during slow and rush periods of the day, normal traffic hazards, and the usual run of weather conditions experienced.

Two typical questions asked in the personal reaction test are:

"Indicate how the following things affect you:

"Having several motorists blow horns on their cars in stalled traffic:

"(1) I feel like yelling to them that blowing horns will do no good

"(2) I sometimes feel like doing the same thing

"(3) Does not bother me

"(4) Makes me nervous."

"Having to keep pleasant in the presence of people who are critical or inclined to argue:

"(1) Think of critical things to say, but do not say them

"(2) Try to show them that they are wrong

"(3) Try to keep from arguing with them

"(4) Annoys me, but I hold in."

We consider it normal to have a driver control himself when motorists try his temper and disposition by pumping their horns when traffic is delayed or by dashing out, without warning, in front of his vehicle. We consider it normal to have a driver handle himself with utmost tact and courtesy even though they make unreasonable demands of him by asking for information during rush hours, for making change of five-dollar bills, blocking doors, and so on.

By placing unpleasant as well as pleasant conditions in the normal category, the driver learns that he is naturally expected to handle himself properly under adverse as well as pleasant conditions.

The other examination attempts to show the applicant basic intelligence. Most of the questions have to do with bus operation. One question, for example, is "At the rate of three for twenty-five cents, how many bus fares can be paid for with one dollar?" This aims to determine elementary mathematical knowledge. Another question attempts to determine the man's ability to understand simple, common words. "A word meaning the same as *dependable* is . . . (1) generous (2) patient (3) neat (4) reliable (5) prompt."

And so on.

(TURN TO PAGE 134, PLEASE)

CONVENTION REPORTS:

SAE Meeting

THE 1950 SAE Annual Meeting (Detroit, Jan. 9-13) reflected continuing interest and active engineering work in the development of fuel economy for automobiles, of functional body design, of air-conditioning, of improved brakes. More than 40 papers on these and such subjects as automatic transmissions, cold weather operation, prediction of road performance in commercial vehicles, muffler design, and fuels were presented before a record attendance of some 3600 engineers. It was estimated that over 2400 attended the annual dinner on Wednesday evening, when General J. Lawton Collins, of Washington, D. C., Chief of Staff, U. S. Army, addressed the association. Another highlight of the week's activities was the presentation of the SAE Horning Memorial Metal to T. A. Boyd, of Research Laboratories Div., General Motors Corp., Detroit, for research in the mutual adaptation of fuels and engines.

Muffler Mumblings

FEATHERS flew Thursday, when operators, manufacturers and engineers concerned, piled onto E. E. Bryant, of Nelson Muffler Corp., taking issues with several points in his paper on "Better Exhaust Mufflers for Trucks and Buses."

Mr. Bryant sensed well ahead that trouble was coming—but he lead with his chin when he opened his talk with these comments: "The title of this paper immediately raises the question as to what constitutes a 'better exhaust system'? There are several answers, depending upon the persons involved. The various purchasing departments of engine, truck and bus builders as well as the purchasing departments of all of the users of this equipment consider a better exhaust system to be a cheaper one. The engine designer wants quieting without any sacrifice of engine performance. The truck and bus builder wants an exhaust system that will fit into any space he happens to have left, after everything else required in mobile equipment has been installed. The operator or fleet manager wants an exhaust system that can readily be serviced or will last for the life of the truck or bus. The driver, particularly of trucks, wants an exhaust noise that sounds powerful. The public, in general, demands that engines be quieted so that they operate as silently as the normal passenger cars of today."

Ducking the issue, manufacturer Byrant continued:

"For years we have been building exhaust mufflers on a competitive basis and as a result I feel that we have sacrificed quality, both acoustically and mechanically, because of the materials that we have had to use. When we consider the corrosive nature of engine exhaust gases resulting in rusting and oxidizing of the exhaust equipment, plus severe pressures, shocks and vibration, it seems evident that the lighter gages, of mild steels have no place in the exhaust systems of trucks and buses. They are used only because we have been forced, as suppliers, to stay competitive in price and have, consequently, resorted to lighter gages to accomplish this point, and at the sacrifice of quality."

(TURN TO PAGE 194, PLEASE)

Truck-Trailer Meet

THE PROBLEMS of highway taxation and the coming fight for survival of the motor carrier industry keynoted the ninth annual convention of the Truck-Trailer Manufacturers Assn. at the Edgewater Gulf Hotel, Edgewater Park, Miss., Jan. 16 to 18.

Lautzenhiser Talks on Taxes

IN A singularly comprehensive report embracing many phases of the industry's problems, Fred B. Lautzenhiser, of International Harvester Co., placed special emphasis on the need for a uniform method of vehicle taxation and the elimination of supplemental taxes, which now number as many as 16 in a single state.

He recommended full support of the maximum gvw rating plan, sponsored by the Automobile Manufacturers Assn., for trucks and truck-tractors, and urged that trailer manufacturers adopt a similar plan, so that each vehicle (including individual units of multiple-unit combinations) could be assessed a single and fairly determined registration fee. This would, of course, take into consideration the size of the vehicle. The only other tax then needed would be the fuel tax. The speaker especially rapped the so-called ton-mile taxes and gross receipts taxes as inequitable and usually conducive of double taxation.

Col. Brisbine Also Raps Taxes

LATER in the program Col. Dawes E. Brisbine, of the National Highway Users Conference, made a strong appeal for active support of the trailer association members in the fight to repeal the Federal automotive excise taxes, including those now levied on gasoline, motor vehicles and trailers, lubricating oil, parts and tires. Annual proceeds from these taxes now exceed $1¼ billion, Brisbine stated, and the taxes are discriminatory against highway users, since receipts are used entirely for the general support of the Government.

At a luncheon address Henry E. English, president of the American Trucking Assns., Inc., outlined the motor carriers' coming fight for survival, and cited particularly such current Washington activities as the Senate investigation and the Sawyer Report (See Pages 67-71, January, CCJ).

He reminded the convention that both were mentioned in the President's report to Congress. "I don't mind telling you," Mr. English said, "that I would be much happier, and much more confident about the outcome of these matters, if I could feel that those people who make the decisions were well informed about the real transportation job being done by trucks."

"Something to Think About"

UNDOUBTEDLY the most-remembered address of the convention was an informal talk by M. J. Neeley, president of Hobbs Mfg. Co. and first president of the TTMA. Entitled "Something to Think About," it accomplished just that for all who heard it.

It can best be summed up in a single sentence: "If we

(TURN TO PAGE 192, PLEASE)

Air resistance, rolling resistance and chassis friction can be figured easily with these charts, providing a quick, reliable guide to truck performance

by **A. F. Stamm,** Staff Engineer
and **E. P. Lamb,** Chief Engineer

Dodge Truck Division
Chrysler Corporation

FIG. 1—COMPUTATION FORM

Data Pertaining to Vehicle & Operation Conditions

Average Height of Vehicle 10¾ Ft.
Make & Model T-158 . Average Width of Vehicle 8 Ft.
Gross Weight 21000 Lbs. Rear Tire Size 9.00 x 20 .
Rev/Mile 526 . Rear Axle Ratio 7.4 . Transmission Ratio 1.00 .
Combined Ratio 7.4 . Engine Speed 2800 RPM. Net Engine Power at Sea Level 112 HP. Altitude 5000 Ft. Road Type & Factor Concrete-Good (0.0).

Computation, Using Charts and Tables, or Formulas

Line No.				Chart, Table, or Formula No.
1.	Theoretical Road Speed	43	MPH	(1.)
2.	Net Engine HP Corrected for Altitude	89.6	HP	(2.)
3.	Rolling Resistance Power	27.6	HP	(3.)
4.	Air Resistance Power	42.4	HP	(4.)
5.	Chassis Friction Power	12.7	HP	(5.)
6.	Level Road Power	82.7	HP (Sum of Line 3, 4, 5)	
7.	Net Grade Climbing Power	6.9	HP (Line 2 Minus 6)	
8.	Net Grade Power per 1000 lbs. Gross Wt.	0.33	HP/1000 lbs.	(6.)
9.	Grade Climbing Ability on Class I Roads	0.29	%	(7.)
10.	Grade Deduction for Road Type or Condition	0.0	%	See Above Data
11.	Net Grade Climbing Ability at Theoretical Road Speed	0.29	% (Line 9 Minus 10)	

10 Simple Steps*
Predict Road Performance

MANY methods for studying commercial vehicle performance are based upon the principle of static equilibrium. Generally speaking, these methods do not take air resistance into consideration. However, because of ever increasing truck road speeds, larger vehicles, and modern styling which call for more frontal area, air resistance is a performance factor which should not be neglected. At the greater road speeds, this factor is of such magnitude that it is of a higher order than any of the other performance variables to be considered.

Consequently, a need has become manifest for acceptance, by the truck industry, of some method for taking air resistance into consideration to evaluate performance variables between models, and provide operators with some "bench mark" serving as a standard of comparison.

This paper is a simple presentation which is intended to be helpful to truck operators, dealers, and manufacturers, in supplying a simple method of predicting truck performance in terms of grade ability at a given road speed, taking into consideration rolling resistance, air resistance, and chassis friction.

The basis of this method of solution is the determination and expression of vehicle resistances in terms of horsepower—that is, in terms of forces acting at a velocity. The method proposed is arranged so that the necessary information can be obtained either from the tables, charts, or formulas which are included. However, as is the case for all average values, there will be slight variations in accuracy when applied to specific vehicles. It should be noted that the empirical data are particularly intended for use with vehicles or combinations of vehicles ranging from 10,000 to 100,000 pounds gross weight rating.

Fundamental Considerations

Truck performance embraces a large number of factors, and no analysis can be considered complete unless it includes braking, acceleration, speed, load, grade climbing, fuel consumption, steering, riding, and other characteristics of the vehicle.

* Excerpted from a paper presented at the SAE Annual Meeting, Detroit, Jan. 9-13.

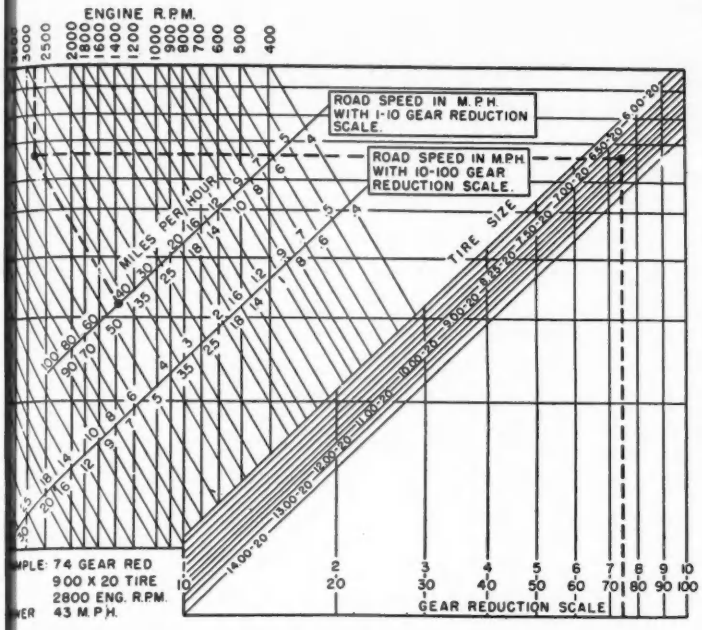

ENGINE R.P.M.
ROAD SPEED IN M.P.H. WITH 1-10 GEAR REDUCTION SCALE.
ROAD SPEED IN M.P.H. WITH 10-100 GEAR REDUCTION SCALE.
MILES PER HOUR
TIRE SIZE
GEAR REDUCTION SCALE
MPLE: 74 GEAR RED
900 X 20 TIRE
2800 ENG. R.P.M.
WER 43 M.P.H.

CHART NO. 1. Follow dotted line to find theoretical road speed with 7.4 rear ratio, 9.00 x 20 tires, turning up 2800 rpm

Altitude—Feet	Multiplier	Altitude—Feet	Multiplier
1000	.96	9000	.64
2000	.92	10000	.60
3000	.88	11000	.56
4000	.84	12000	.52
5000	.80	13000	.48
6000	.76	14000	.44
7000	.72	15000	.40
8000	.68		

TABLE NO. 2. Net sea level hp x multiplying factor gives the net hp corrected for altitude

MPH	Rolling Factor	MPH	Rolling Factor	MPH	Rolling Factor	MPH	Rolling Factor	MPH	Rolling Factor
11	.252	25	.656	39	1.555	53	1.748	67	2.43
12	.278	26	.689	40	1.195	54	1.794	68	2.49
13	.304	27	.722	41	1.234	55	1.840	69	2.54
14	.331	28	.756	42	1.274	56	1.888	70	2.59
15	.358	29	.790	43	1.315	57	1.935	71	2.65
16	.386	30	.824	44	1.356	58	1.984	72	2.70
17	.414	31	.859	45	1.399	59	2.030	73	2.76
18	.443	32	.894	46	1.441	60	2.080	74	2.81
19	.472	33	.931	47	1.482	61	2.13	75	2.87
20	.501	34	.966	48	1.526	62	2.18	76	2.93
21	.531	35	1.003	49	1.570	63	2.23	77	2.98
22	.562	36	1.041	50	1.613	64	2.28	78	3.04
23	.593	37	1.079	51	1.658	65	2.33	79	3.10
24	.625	38	1.117	52	1.702	66	2.39	80	3.16

TABLE NO. 3. Rolling resistance hp equals the rolling factor x the gross weight over 1000

Area Factor

Max. Height of Vehicle in Feet	Maximum Vehicle Width in Feet						
	5	5½	6	6½	7	7½	8
5	.057	.062	.068	.074	.079	.085	.091
5½	.063	.070	.076	.082	.089	.095	.101
6	.070	.077	.084	.091	.098	.105	.112
6½	.077	.084	.092	.100	.107	.115	.123
7	.083	.092	.100	.108	.117	.125	.133
7½	.090	.099	.108	.117	.126	.135	.144
8	.097	.106	.116	.126	.135	.145	.155
8½	.103	.114	.124	.134	.145	.155	.165
9	.110	.121	.132	.143	.154	.165	.176
9½	.117	.128	.140	.152	.163	.175	.187
10	.123	.136	.148	.160	.173	.185	.197
10½	.130	.143	.156	.169	.182	.195	.213 .208
11	.137	.150	.164	.178	.191	.205	.219
11½	.143	.158	.172	.186	.201	.215	.229
12	.150	.165	.180	.195	.210	.225	.240
12½	.157	.172	.188	.204	.219	.235	.251
13	.163	.180	.196	.212	.229	.245	.261
13½	.170	.187	.204	.221	.238	.255	.272

TABLE NO. 4A. Air resistance hp equals the area factor x velocity constant. This chart gives area factor

Velocity Constant

Speed MPH	Velocity Constant	Speed MPH	Velocity Constant	Speed MPH	Velocity Constant	Speed MPH	Velocity Constant
11	3.3	29	61	47	260	65	686
12	4.3	30	68	48	276	66	718
13	5.5	31	74	49	294	67	750
14	6.9	32	82	50	313	68	786
15	8.4	33	90	51	332	69	821
16	10.2	34	98	52	352	70	857
17	12.3	35	107	53	372	71	894
18	14.6	36	117	54	394	72	933
19	17.1	37	127	55	416	73	972
20	20.0	38	137	56	439	74	1012
21	23.2	39	148	57	463	75	1054
22	26.6	40	160	58	488	76	1096
23	30.4	41	172	59	513	77	1141
24	34.6	42	185	60	540	78	1185
25	39.1	43	199	61	567	79	1231
26	43.9	44	213	62	596	80	1279
27	49.2	45	228	63	624		
28	54.9	46	243	64	655		

TABLE NO. 4B. Use velocity constant corresponding to theoretical road speed. In this case constant is 199

This discussion is limited to properties associated with vehicle resistance to motion and the engine power, hence the fundamental relation can be expressed as: Power required = Sum of the resistance power.

Obviously, the power required to move a vehicle is supplied by the engine, and the difference between the developed power and resistance power gives the power available for grade climbing and/or acceleration. While this is true for any condition of operation, certain special limiting conditions are often of interest. Performance characteristics are ordinarily given with the engine operating at wide open throttle and this condition is assumed to givern in all that follows. The cases which will be considered are:

A. What is vehicle grade climbing ability at a given road speed?
B. What maximum vehicle speed can be expected on a level road with specified chassis units?
C. What is the potential maximum vehicle speed which could be obtained with the ideal selection of chassis units?

The solution for all of these requires knowledge or estimates of factors pertaining to the vehicle and to conditions of operation. All succeeding illustrations pertain to a truck with conditions of operation as follows:

Net engine bhp developed—112
Frontal area—80 sq ft
Height of vehicle—10¾ ft
Width of vehicle—8 ft
Gross weight—21000 lb
Tire size—9.00/20—10 ply
Tire revolution per mile—526
Altitude—5000 ft (also at sea level)
Axle ratio—7.4 (standard ratio)
Transmission ratio—1.00 (direct)
Road type and condition—concrete, good
Road type and condition factor—0

(TURN TO NEXT PAGE, PLEASE)

Gross Weight Rating of Power Unit	Engine Revolutions Per Minute													
	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200	3400
10000	2.6	3.0	3.4	3.8	4.2	4.6	5.0	5.4	5.8	6.2	6.6	7.0	7.4	7.8
12000	2.9	3.4	3.9	4.4	4.8	5.3	5.8	6.3	6.8	7.2	7.7	8.2	8.7	9.2
14000	3.2	3.8	4.4	4.9	5.5	6.0	6.6	7.2	7.7	8.3	8.8	9.4	10.0	10.5
16000	3.6	4.2	4.8	5.5	6.1	6.8	7.4	8.0	8.7	9.3	10.0	10.6	11.2	11.9
18000	3.9	4.6	5.3	6.0	6.8	7.5	8.2	8.9	9.6	10.4	11.1	11.8	12.5	13.2
20000	4.2	5.0	5.8	6.6	7.4	8.2	9.0	9.8	10.6	11.4	12.2 12.7	13.0	13.8	14.5
24000	4.8	5.8	6.8	7.7	8.7	9.6	10.6	11.6	12.5	13.5	14.4	15.4	16.4	17.3
28000	5.5	6.6	7.7	8.8	9.9	11.1	12.2	13.3	14.4	15.5	16.7	17.8	18.9	20.0
32000	6.1	7.4	8.7	10.0	11.2	12.5	13.8	15.1	16.4	17.6	18.9	20.2	21.5	22.7
36000	6.8	8.2	9.6	11.1	12.5	13.9	15.4	16.8	18.3	19.7	21.2	22.6	24.0	25.5
40000	7.4	9.0	10.6	12.2	13.8	15.4	17.0	18.7	20.2	21.8	23.4	25.0	26.6	28.2
45000	8.2	10.0	11.8	13.6	15.4	17.2	19.0	20.8	22.6	24.4	26.2	28.0	29.8	31.8
50000	9.0	11.0	13.0	15.0	17.0	19.0	21.0	23.0	25.0	27.0	29.0	31.0	33.0	35.0
60000	10.6	13.0	15.4	17.8	20.2	22.6	25.0	27.4	29.8	32.2	34.6	37.0	39.4	41.8

TABLE NO. 5. Chassis frictional hp. Find gross weight as defined in Step 8, read answer in vertical columns under engine speed

Net Grade Power HP	Gross Weight—Pounds																	
	10000	12000	14000	16000	18000	20000	24000	28000	32000	36000	40000	45000	50000	60000	70000	80000	90000	100000
4	.4	.33	.28	.25	.22	.20	.17	.14	.12	.11	.10	.09	.08	.07	.06	.05	.04	.04
5	.5	.42	.36	.31	.28	.25	.21	.18	.16	.14	.12	.11	.10	.08	.07	.06	.05	.05
6	.6	.50	.43	.37	.33	.30	.25	.21	.19	.17	.15	.13	.12	.10	.09	.08	.07	.06
7	.7	.58	.50	.44	.39	.35 .33	.29	.25	.22	.19	.17	.16	.14	.12	.10	.09	.08	.07
8	.8	.67	.57	.50	.44	.40	.33	.28	.25	.22	.20	.18	.16	.13	.11	.10	.09	.08
9	.9	.75	.64	.56	.50	.45	.37	.32	.28	.25	.22	.20	.18	.15	.13	.11	.10	.09
10	1.0	.83	.71	.62	.55	.50	.42	.36	.31	.28	.25	.22	.20	.17	.14	.12	.11	.10
11	1.1	.92	.79	.69	.61	.55	.46	.39	.34	.30	.27	.24	.22	.18	.16	.14	.12	.11
12	1.2	1.0	.86	.75	.67	.60	.50	.43	.37	.33	.30	.27	.24	.20	.17	.15	.13	.12
13	1.3	1.1	.93	.81	.72	.65	.54	.46	.41	.36	.32	.29	.26	.22	.19	.16	.14	.13
14	1.4	1.2	1.0	.88	.78	.70	.58	.50	.44	.39	.35	.31	.28	.23	.20	.17	.16	.14
15	1.5	1.2	1.1	.94	.83	.75	.63	.54	.47	.42	.37	.33	.30	.25	.21	.19	.17	.15
16	1.6	1.3	1.1	1.0	.89	.80	.67	.57	.50	.45	.40	.36	.32	.27	.23	.20	.18	.16
17	1.7	1.4	1.2	1.1	.90	.85	.71	.61	.53	.47	.42	.38	.34	.28	.24	.21	.19	.17
18	1.8	1.5	1.3	1.1	1.0	.90	.75	.64	.56	.50	.45	.40	.36	.30	.26	.22	.20	.18
19	1.9	1.6	1.4	1.2	1.1	.95	.79	.68	.59	.53	.47	.42	.38	.32	.27	.24	.21	.19
20	2.0	1.7	1.4	1.2	1.1	1.0	.83	.71	.62	.55	.50	.44	.40	.33	.29	.25	.22	.20
25	2.5	2.1	1.8	1.6	1.4	1.3	1.0	.89	.78	.70	.63	.56	.50	.42	.36	.31	.28	.25
30	3.0	2.5	2.1	1.9	1.7	1.5	1.2	1.1	.94	.83	.75	.67	.60	.50	.43	.37	.33	.30
35	3.5	2.9	2.5	2.2	1.9	1.8	1.5	1.2	1.1	.97	.88	.78	.70	.58	.50	.44	.39	.35
40	4.0	3.3	2.8	2.5	2.2	2.0	1.7	1.4	1.2	1.1	1.0	.90	.80	.67	.57	.50	.44	.40
45	4.5	3.7	3.2	2.8	2.5	2.3	1.9	1.6	1.4	1.2	1.1	1.0	.90	.75	.64	.56	.50	.45
50	5.0	4.1	3.6	3.1	2.8	2.5	2.1	1.8	1.6	1.4	1.2	1.1	1.0	.83	.71	.63	.55	.50
60	6.0	5.0	4.3	3.7	3.3	3.0	2.5	2.1	1.9	1.7	1.5	1.3	1.2	1.0	.86	.75	.67	.60
70	7.0	5.8	5.0	4.4	3.9	3.5	2.9	2.5	2.2	1.9	1.7	1.6	1.4	1.2	1.0	.87	.78	.70
80	8.0	6.7	5.7	5.0	4.4	4.0	3.3	2.8	2.5	2.2	2.0	1.8	1.6	1.3	1.1	1.0	.89	.80
90	9.0	7.5	6.4	5.6	5.0	4.5	3.7	3.2	2.8	2.5	2.2	2.0	1.8	1.5	1.3	1.1	1.0	.90
100	10.0	8.3	7.1	6.2	5.5	5.0	4.2	3.6	3.1	2.8	2.5	2.2	2.0	1.7	1.4	1.2	1.1	1.0
110	11.0	9.2	7.9	6.9	6.1	5.5	4.6	3.9	3.4	3.0	2.7	2.4	2.2	1.8	1.6	1.4	1.2	1.1
120	12.0	10.0	8.6	7.5	6.7	6.0	5.0	4.3	3.7	3.3	3.0	2.7	2.4	2.0	1.7	1.5	1.3	1.2
130	13.0	11.0	9.3	8.1	7.2	6.5	5.4	4.6	4.1	3.6	3.2	2.9	2.6	2.2	1.9	1.6	1.4	1.3
140	14.0	12.0	10.0	8.8	7.8	7.0	5.8	5.0	4.4	3.9	3.5	3.1	2.8	2.3	2.0	1.7	1.6	1.4

TABLE NO. 6. Net grade power per 1000 lb GVW. Obtain net grade hp from line 7 of work chart, locate on left column and read answer in vertical columns under gross weight taken from data section of Fig. 1

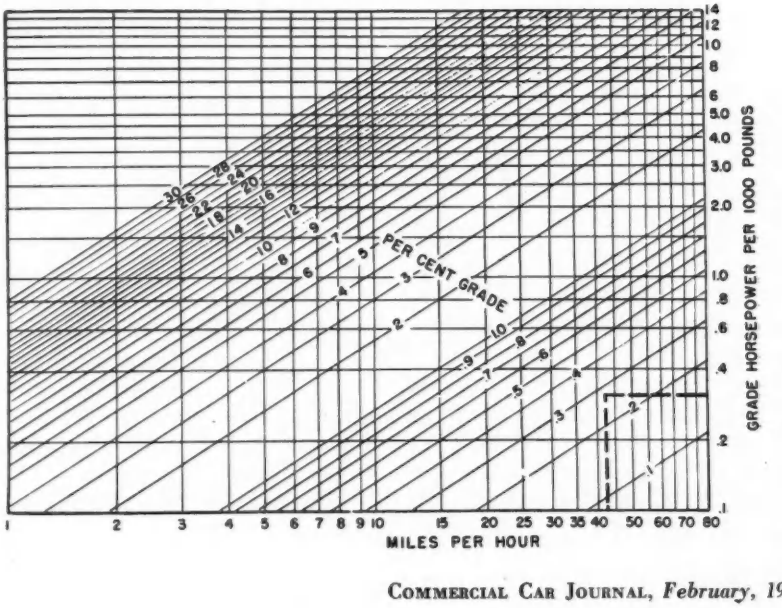
All calculations as based upon the resistance equations given in this paper.

A. Vehicle Grade Climbing Ability at a Given Road Speed

Determination of grade ability at a given road speed in general, or, for example, finding out what grade a truck loaded to 21,000 lb gross weight will climb in high gear at a road speed corresponding to 2800 engine rpm (in this case 43 miles per hour), depends upon balancing the power required to overcome the various resistances opposing motion and the power developed. Forces and velocities are factors in this problem which, combined, constitute rates of doing work. Hence, horsepower is a logical basis for this anal-

(TURN TO PAGE 164, PLEASE)

TABLE NO. 7. Grade climbing ability for class I roads in good condition. Find road speed on bottom scale and the grade hp per 1000 lb GVW on right scale. Where these intersect, grade is read on the diagonal lines



Survey Shows Big Gains in Life of FRONT-END PARTS

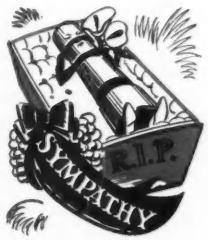
SURVEY NO. 15

Current front-end maintenance practices boost front-end mileage. King pins and bushings net 54,528 miles, about 15,000 more than prewar. Other front-end parts show comparable gains

Analysis **by A. W. Greene,** *Managing Editor, Commercial Car Journal*

THIS SURVEY has produced some surprising information on the life of front axle parts. The general conclusion resulting from the data obtained from CCJ's Board of Experts is that the life of these parts has been increased considerably over that obtained during the pre-war years.

There is room for speculation as to what is responsible for this increased life. The great need for conserving tires during the war focused attention on correct front-end alignment, which, according to tire manufacturers, was responsible for approximately one-third of the wasted miles obtainable from a tire.



54,528 MILES

King Pins and Bushings Average Almost 55,000 Miles

Table 1

While national average is 54,528 miles as the life of king pins and bushings, some fleets get 200,000. Tie-rod ends average 65,355, front bearings 93,335

VOCATIONAL GROUPS	Number of Fleets Reporting	KING PINS AND BUSHINGS Mileage Range (Last 000 Omitted)	KING PINS AND BUSHINGS Mileage Average	TIE ROD ENDS Mileage Range (Last 000 Omitted)	TIE ROD ENDS Mileage Average	FRONT WHEEL BEARINGS Mileage Range (Last 000 Omitted)	FRONT WHEEL BEARINGS Mileage Average
FOR-HIRE CARRIER	31	20 – 200	68,774	20 – 250	81,417	45 – 250	96,946
FOOD DISTRIBUTION	45	10 – 200	45,833	10 – 200	60,233	30 – 300	96,163
GOVERNMENT	30	12 – 80	43,448	10 – 100	44,231	20 – 200	73,286
CONSTRUCTION AND MINING	6	25 – 200	77,500	25 – 200	75,000	45 – 150	75,833
INDUSTRIAL	6	40 – 100	73,333	40 – 300	118,333	35 – 200	75,000
PETROLEUM	8	40 – 160	79,500	40 – 190	98,250	50 – 150	95,000
PUBLIC UTILITY	23	20 – 100	51,114	20 – 150	53,864	40 – 200	84,524
RETAIL DELIVERY	18	7.5 – 75	39,844	10 – 100	48,000	20 – 200	104,231
TRUCK RENTAL	5	20 – 40	27,000	25 – 50	34,000	50 – 100	77,000
TRUCK AND BUS FLEETS, MIXED	10	50 – 120	81,350	60 – 150	99,500	80 – 300	160,800
TOTAL AND AVERAGE ALL VOCATIONAL GROUPS	180	7.5 – 200	54,528	10 – 300	65,355	20 – 300	93,335

Composition of Vocational Groups as Used in the Accompanying Tables

FOR-HIRE CARRIER—Motor Freight Operators in Local and Over-the-Road Service.
FOOD DISTRIBUTION—Bakery, Dairy, and Other Food Products fleets.
GOVERNMENT—State, County, Municipal, and Federal fleets.
CONSTRUCTION AND MINING—Building, Mine, Quarry, and Gravel fleets.
INDUSTRIAL—Fleets operated by manufacturers.
PETROLEUM—Production and Distribution fleets.
PUBLIC UTILITY—Gas, Power, Water and Telephone fleets.
RETAIL DELIVERY—(Other than Food Products), Dry Cleaning, Laundry, Newspaper, Coal and Ice, Department Store, Beverage fleets.
TRUCK RENTAL—Agencies leasing motor trucks.
TRUCK AND BUS FLEETS, MIXED—Passenger carriers operating own truck fleets.

The more or less compulsory practice of making frequent front-end checks produced so many more extra miles from a tire, that most fleets are continuing these frequent checks up to the present.

Parts shortage was another contributing factor. Naturally, better attention (including better lubrication) given the front end resulted in increased life of those parts.

Another consideration is the improved design and construction of the front end, plus better springing and the use of shock absorbers by some manufacturers, especially in the light weight class (which includes about half of the vehicles in use). This, too, naturally would result in increased life of those parts.

Whether it is attributable to one or the other, or all of these conditions, the fleet operator has benefited by longer life of front-end parts.

King Pins and Bushings First to Go

KING PINS and bushings are the first parts to require replacement on the front end. They always were the first to go, to be sure, but their average life today is up to 54,528 miles, as shown in table one. Inasmuch as this is the first survey of its kind, no exact prewar mileage comparison figures are available. However, best estimates set the current mileage gain at about 15,000.

The range of the mileages reported varies from 7500 miles to 200,000. The lows and highs are reported by fleets whose vocational operating conditions naturally influence either low or high life of these parts.

Special creditable mention goes to the construction fleets. Despite the fact that their unusually rugged operating conditions are exceptionally hard on the front end, the lowest mileage reported for the life of king pins and bushings is 25,000. It is to be noted that fleets in this group also have extended the life of these parts to 200,000 miles.

Tie-Rod and Drag Link Ends

THE life of the remaining parts of the front end also show an improvement over that obtained before the war. However, the improvement is not nearly as great as for king pins and bushings. The average life of tie-rod ends is shown to be 65,355 miles.

It is interesting to note that fleets in every vocation show more average mileage for tie-rod ends than for king pin and bushing—except the construction group. This group's average for tie-rod ends is 2500 miles less than for king pins and bushings. Because the total number of fleets reporting in this group is small, troubles experienced by a couple of fleets greatly affect the final average.

The life of drag link ends is about 12,000 miles better than that of tie-rods, as shown in Table 2. However, the range of average mileages reported is approximately the same—10,000 to 300,000 for the tie-rods and 10,000 to 350,000 for the drag links.

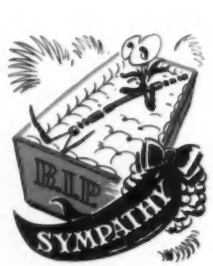
It is interesting to note that three fleet groups—namely, Food Distribution, Construction and Retail Delivery—show almost identical life of this part as for the tie-rod. For some unexplainable reason the truck and bus fleets show a lower average life, while all other fleets show a higher average.

Front Wheel Bearings

BEARING manufacturers often have claimed that, with proper attention front wheel bearings should last for at least 100,000 miles. The nation's fleets almost have reached that goal. Table 1 shows that the national average is 93,335 miles. That still better results are possible, is indicated by the range of mileages reported, which runs as high as 300,000 miles. No group shows less than 100,000 mile as the maximum of its range.

Steering Parts

THE average life of steering gear worms and sector shafts is almost the same. There is less than 7000 miles difference. Three fleet groups report identical mileage for these parts. Four fleet groups are within 5000 miles, while three groups show appreciable difference in favor of the sector shaft. Only one fleet group shows the life of sector shafts to be less than that of the steering gear worms. This difference is due to some low mileages reported by a few municipal fleets.



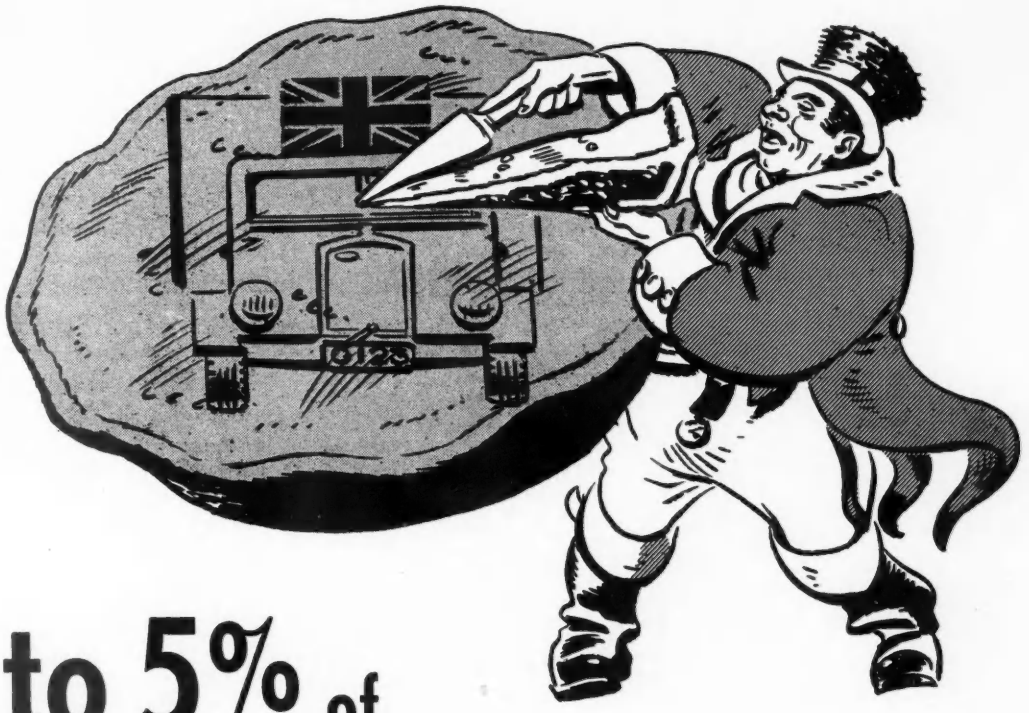
77,709 MILES

Fleets Report High Mileage for Life of Steering Parts

Table 2

Reported range varies from 15,000 to 500,000 miles, but national average for steering worms is 118,127, and 124,788 for shafts. Drag links average 77,709

VOCATIONAL GROUPS	Number of Fleets Reporting	DRAG LINK ENDS Mileage Range (Last 000 Omitted)	DRAG LINK ENDS Mileage Average	STEERING GEAR WORMS Mileage Range (Last 000 Omitted)	STEERING GEAR WORMS Mileage Average	SECTOR SHAFTS Mileage Range (Last 000 Omitted)	SECTOR SHAFTS Mileage Average
FOR-HIRE CARRIER	31	20 - 250	130,583	20 - 500	143,796	20 - 500	194,907
FOOD DISTRIBUTION	45	10 - 200	60,091	30 - 300	110,088	30 - 200	100,024
GOVERNMENT	29	20 - 150	55,192	20 - 150	78,611	20 - 150	76,087
CONSTRUCTION AND MINING	6	25 - 200	75,000	40 - 200	110,000	40 - 200	110,000
INDUSTRIAL	6	40 - 300	143,333	60 - 250	164,000	60 - 300	175,000
PETROLEUM	8	40 - 350	118,250	65 - 500	172,143	65 - 500	172,143
PUBLIC UTILITY	23	20 - 150	55,568	40 - 250	89,750	40 - 250	90,750
RETAIL DELIVERY	16	10 - 100	48,333	15 - 160	77,333	15 - 160	81,667
TRUCK RENTAL	5	25 - 60	39,000	50 - 100	72,000	50 - 100	72,000
TRUCK AND BUS FLEETS, MIXED	10	60 - 150	97,100	60 - 500	290,000	63 - 500	295,375
TOTAL AND AVERAGE ALL VOCATIONAL GROUPS	179	10 - 350	77,709	15 - 500	118,127	15 - 500	124,788



ONLY 3 to 5% of Britain's Trucks are "Nationalized"

$100,000,000 "down payment," but no final settlements, on world's largest truck fleet nets monopoly only in over-the-road business. Coming election may restore free enterprise

By Ralph Cropper
Transport Consultant, Beckenham, England

ALTHOUGH NATIONALIZATION of trucking in Great Britain has made considerable progress, it is often overlooked that the vast volume of trucking there still will remain outside the nationalized scheme.

After an important battle during the debates in Parliament on the nationalization plan, it was decided to leave private trucking as free as ever. This was accomplished under what is known as a "C" license, which covers more than 600,000 trucks.

Nationalization, thus, only hits the for-hire trucking industry. But even there, the bigger proportion, by far, of all the trucks will remain outside the scheme.

There are some 150,000 for-hire trucks in Britain which operate under what are known as "A" or "B" licensees. The "B" license is always subjected to much greater limitations as to commodities that may be carried and area of operations than the "A" license.

Extent of Acquisition Unknown

NOBODY knows the exact extent to which the nationalized scheme will reach. The liability of a trucking firm to be bought out by the Road Haulage Executive, which is the name of the body operating the nationalized trucking, depends upon the interpreting of some rather complicated general rules laid down by Parliament. The Minister of Transport, who was responsible for the scheme and who directed the passage of the plan through Parliament, stated that some 25,000 trucks would fail to be acquired. That is only one-sixth of the total.

However, it is now known that a larger proportion will be affected. Figures recently issued by the Road Haulage Executive indicate that it expects its fleet to reach some 40,000 trucks; a little more than one-quarter of the total. Part of this increase in the number of nationalized trucks has

(TURN TO NEXT PAGE, PLEASE)

Only 3 to 5% of Britain's Trucks . . .

Continued from Page 87

Basis of Calculating Compensation

The Act sets out the following basis for the calculation of compensation:

(a) *For vehicles*—The cost of purchasing an equivalent new vehicle of the same type, *less* one-fifth thereof for each year of the vehicle's life, calculated on a reducing basis. This is subject to adjustment for betterment or worsening of the vehicle from what would be regarded as the average condition of a vehicle of that age and type.

(b) *For other tangible assets* (buildings, stock, etc.) — The current market value on the assumption that there had been no nationalization of transport.

(c) *For compensation for cessation of business*—A schedule to the Act lays down a complicated formula for calculating the "average net profits" of the undertaking per year for the past three years prior to acquisition. This figure is then to be multiplied by some figure between two and five times, depending upon the likelihood that those profits would, but for nationalization, have been maintained.

(d) *For severance*—There is a formula for calculating the costs of severance in those cases where the haulage business was formerly run jointly with some non-haulage business, and the latter is subjected to increased costs because the haulage business is taken away. These increased costs can only be claimed in respect to a period of up to 5 years.

(e) *Compensation for loss* of office, or worsening of conditions of employment, on the part of any regular employee, which includes a managing director of a company, or a director whose functions are substantially those of an employee—Compensation under this head is to be paid in accordance with regulations to be made by the Minister of Transport. Although the Act has now been law for more than 2 years, these regulations have not yet been published by the Minister.

been due to the fact that a number of trucking firms, while not strictly liable to acquisition under the formula in the Act of Parliament, have chosen to seek acquisition to claim compensation based on their profits in the immediate postwar years—a period of high earnings.

One Monopoly Since Feb. 1

THE Road Haulage Executive will stand as a mammoth organization, when it eventually gets into full swing. In the field of long-distance transport by highway, it has just acquired (since February 1, 1950) a monopoly; except in certain limited directions. In short distance trucking, the Executive is not prevented from operating its own trucks; indeed, it is already so doing by reason of the fact that, in buying out the long-distance trucking firms, almost all of those firms had some activities in short-distance transportation as well. Naturally, the Executive has continued those activities, of necessity.

This powerful single body thus stands in direct competition with the non-nationalized trucks, which, although greater in number, are split up amongst thousands of small owners. In the case of some of these owners, the Executive has the power to restrict their operating rights; insofar as those rights extend into the long-distance sphere.

With the rest of them, the Executive is in a position to adopt fierce competitive policies; particularly in regard to rates, pressure on shippers, and traffic solicitation. In this way, many of those owners could be driven out of business.

Moderate Policies Likely

YET it seems unlikely that the Executive will go as far as that. More moderate policies are likely to prevail. Indeed, the Executive has arranged for Liaison Committees to be formed all over the island, so that its officers can discuss trucking matters freely with the representatives of the free truckers. Then, the Executive, as a public body, is expected to adopt a certain statesmanlike attitude in regard to its general policies.

Its actions in regard to rates and other competitive practices will eventually, when the scheme gets fully working, have to be justified before a Court known as the Transport Tribunal. But it is common opinion that several years are likely to elapse before this situation is reached. Moreover, the Executive must consider the effects of its actions on public opinion. The British sense of fair play would, before long, be roused if there was any widespread policy of ruthless suppression of the independent hauler.

Problems and Progress

LET us turn to consider the progress made by the Road Haulage Executive. It has undoubtedly been faced with a simply colossal task. Although its brother-organization dealing with the nationalized railroads, the Railway Executive, was appointed in mid-1947, the Minister of Transport experienced such difficulties in finding persons able and willing to serve that he was unable to nominate the members of the Road Haulage Executive until Spring, 1948.

(TURN TO PAGE 128, PLEASE)

(Advertisement)

2-ton shown with 15-foot van body—1½-ton also available

Studebaker trucks bring you something new in thrift!

GET the tops in earning power as well as pulling power for your new-truck money.

Get the ever-on-the-job reliability of a husky, handsome, modern new Studebaker truck.

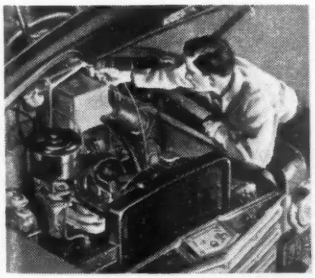
Get the benefit of the amazing new stand-up stamina assured you by Studebaker's massive, rigid, exclusive K-member frame.

Get the wear-resisting durability of Studebaker's sturdy axle and spring construction.

Enjoy new freedom from repair bills, thanks to Studebaker's famous master craftsmanship.

Stop in at a nearby Studebaker showroom and get the proof of the economies that Studebaker trucks are effecting right now on *your kind* of work.

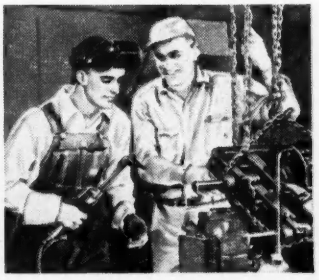
The rugged, powerful, trustworthy new Studebaker trucks come in half-ton to two-ton models—a comprehensive range of sizes and wheelbases—trucks designed to meet hundreds of varied hauling requirements.



Just lift the hood! Everything's easy to get at! No standing on a box! No stooping under the dash! Studebaker's unique "lift-the-hood" accessibility saves effort, time and money for you!

Low cab floor—no strenuous climbing! Doors close securely on tight-gripping rotary latches. Steps are enclosed inside doors. Adjusto-air seat cushions. Big-visibility windows, windshields.

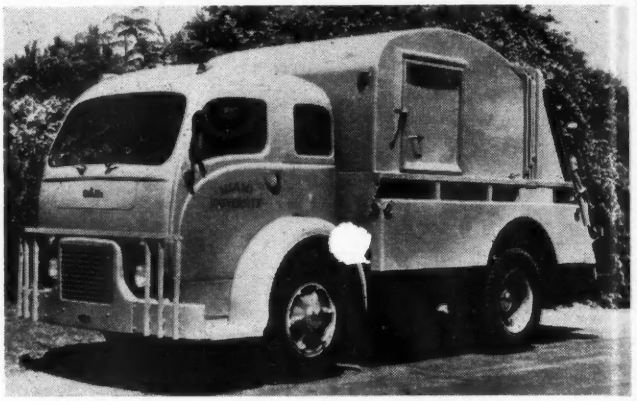
"Tops-in-thrift" engines of the truck world! Two great Studebaker truck engines—the Econo-miser and the Power-Plus—develop plenty of horsepower and deliver welcome high torque.



Built to last by father-and-son teams and thousands of other conscientious craftsmen! Studebaker trucks excel in staying power as well as earning power.

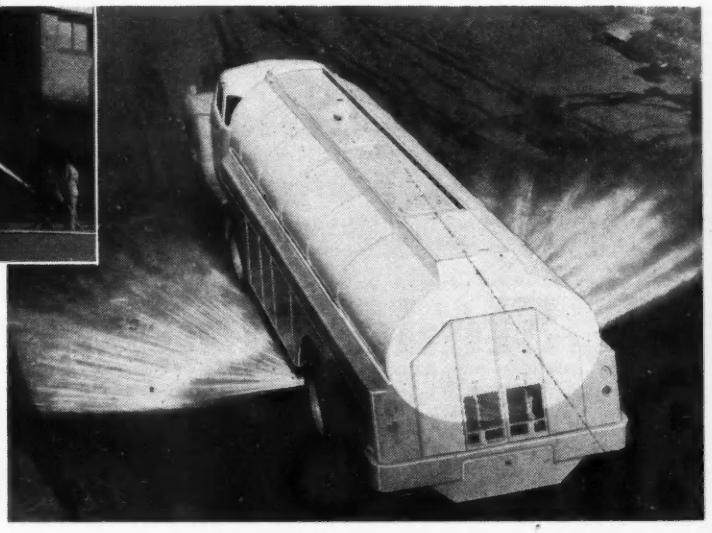
Studebaker, South Bend 27, Indiana, U. S. A.

PICKED pix OF INTEREST TO FLEETS



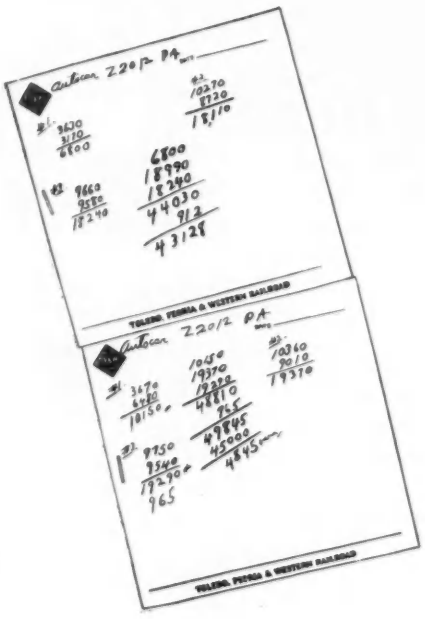
Collegiate White

A reduction from 10 to three collection trips, an approximate saving of 3000 mi per yr, has placed this White 3000 with its 9 cu-ft capacity, in the "cum laude" class of the University of Miami in Oxford, Ohio. Specializing in "Sanitary Engineering," this unit keeps the campus clean and tidy by collecting trash and garbage in its packer body



Street-Flushing, Fire-Fighting

This special "Municipal" semi-trailer, made by Chadwick, Inc., Darby, Pa. leads a double life. Above: With two flushing nozzles in action, approximately 1½ mi of street can be flushed in one min. High pressure is obtained with assistance of a compressed-air unit. Trailer is 24 ft 8 in. long with a 2000 gal capacity. An engine-driven pump delivers 550 gpm at 55 psi. Upper Left: The Chadwick semi used for fire fighting. It is shown throwing a stream through a 1-in. diameter fire nozzle. The tank emptied in 10 min. and was refilled again in 5 min. with a plug pressure of 40 psi



Weighty Evidence

A truck owned by W. Z. Getz, Lancaster, Pa., was halted on Route 88 by a state policeman and three civilians for a weight check. It showed an overweight. The driver knew he was within limits, and insisted on a recheck. Despite threats of "disturbing the peace," a recheck reluctantly was made, and showed he was within limits. The driver asked for a copy of the weight record, as insurance against further delays. Ironically, he noticed the sheets bore the name of a railroad and wondered if there was any significance in this evidence

New York City's Special Van

Built by Masin & Kriz, Inc., for emergency work on the city's public utility structures

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CREATIVE ENGINEERING

GEARED TO QUANTITY PRODUCTION

BRAKING HEADQUARTERS

FOR THE AUTOMOTIVE INDUSTRY!

No industry in all the world has a more consistent record of product progress than the automotive industry. The fact that for more than a quarter of a century the automotive industry has considered Bendix Products Division as braking headquarters, is indeed a tribute to Bendix engineering ingenuity and production skill. To continue to merit this enviable reputation of recognized leadership is at all times, the guiding policy in the design and manufacture of Bendix Brakes. Be assured Bendix Products Division is not content to rest on its past achievements but is eager to meet the challenge of tomorrow's vehicles with even smoother, safer brakes for every purpose.

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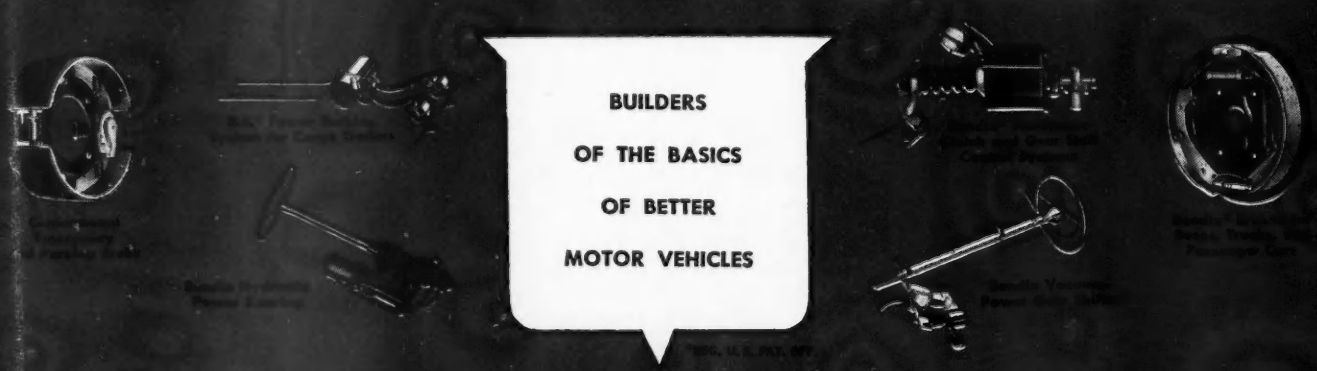
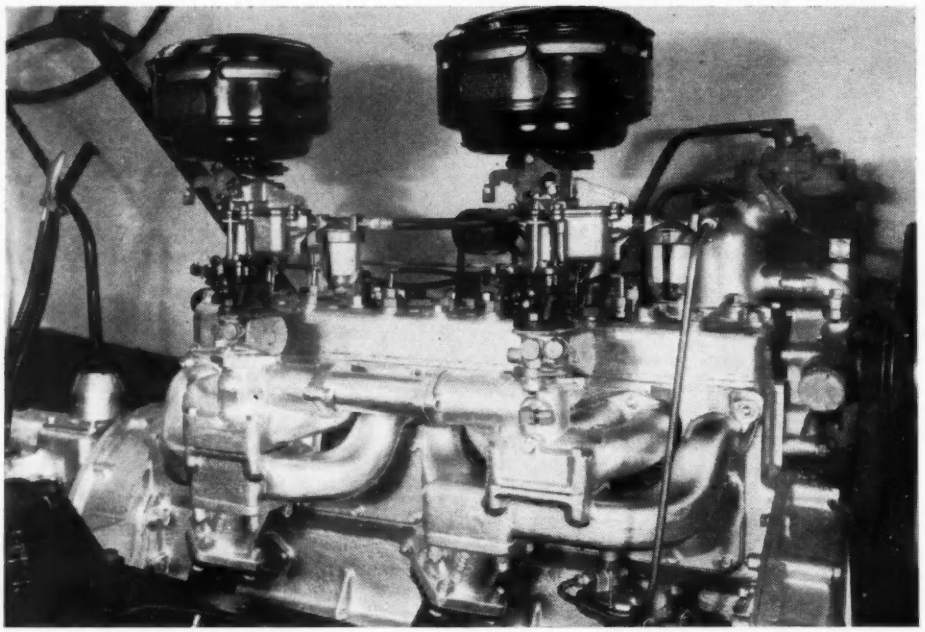
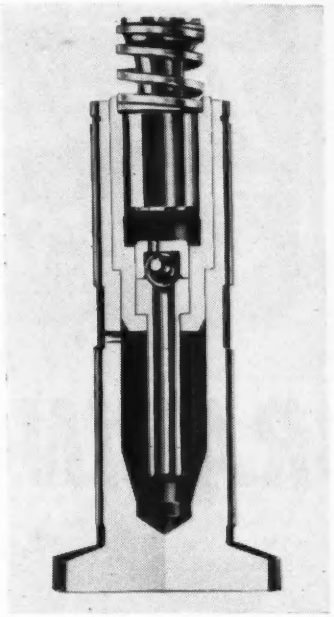


BUILDERS
OF THE BASICS
OF BETTER
MOTOR VEHICLES





Twin carburetors, twin manifolds and twin exhaust systems are said to provide better fuel distribution and economy. Heavy-duty engine delivers 154 bph and 330 ft-lb torque. Hydraulic valve lifters provide zero clearance

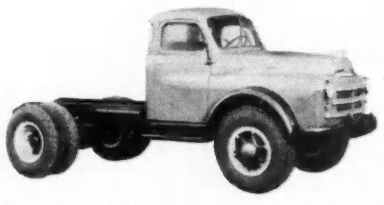
NEW DODGE Y Models

Powered by 337 Cu. In. Engine

Twin carburetion and manifolding along with hydraulic valve lifters are featured on 154 HP engine powering 28,000-lb GVW class

THIS new four-ton truck with a GVW rating of 28,000 lb and a GCW of 50,000 lb rounds out Dodge's line in the heavy-duty field. These Model Y trucks are available in 30 GVW models in the following range of wheelbases: 130, 142, 154, 172, and 190 in. With this new reach into the heavier class Dodge now offers a total of 396 model variations.

Outstanding feature of this line is a new 377 cu in. engine using a 4-in. bore and a 5-in. stroke with a compression ratio of 6.5 to 1. The 6-cyl., L-head engine develops 154 bhp at 3000 rpm. Twin carburetors, manifolds and exhaust systems developed with this engine are said to improve fuel distribution and economy. Another improvement is in the valve train, with hydraulic valve lifters being used as standard equipment.



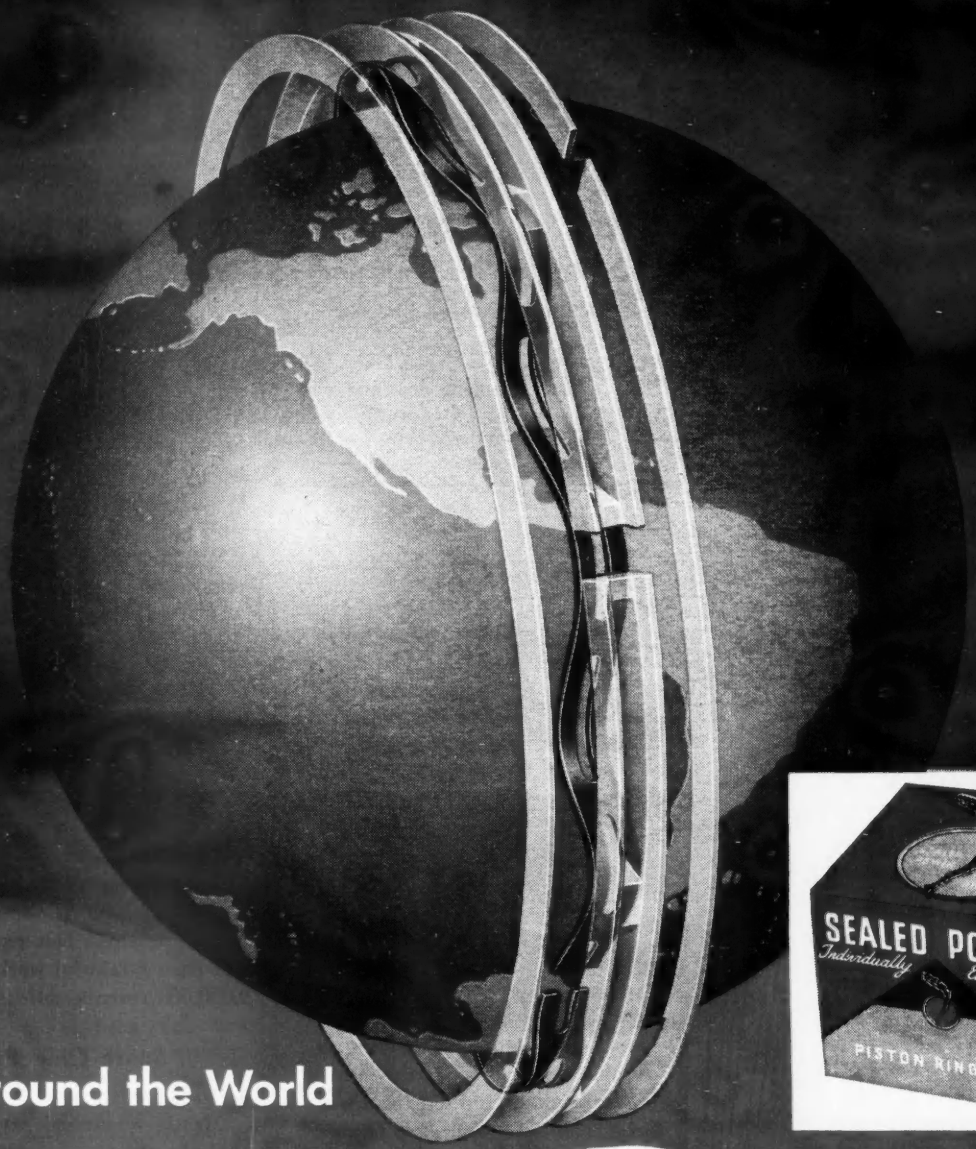
The Y and YA models are offered in 30 GVW models, with wide wb range

Pistons are of aluminum alloy, steel strut type, tin-plated and fitted with four rings, the top ring being chrome-plated. Two oil-bath type air cleaners, two ceramic gasoline filters, two velocity-type governors and an anti-vapor-lock fuel pump have been incorporated in the new power plant. Carburetors are of the plain tube downdraft type mounted over twin manifolds with short passageways and individual ports for each cylinder. Improved mixture and reduced back pressures are said to be obtained with this system.

Intake and exhaust valves have hard seat inserts—Silchrome inserts for intake valves; Stellite-faced Silchrome inserts for exhaust valves. Intake valves are of Silchrome while exhaust valves are Silchrome, Stellite-faced, and sodium-cooled. In addition, a rust-proof water distributing tube and large water passages around valve stems assures maximum heat dissipation.

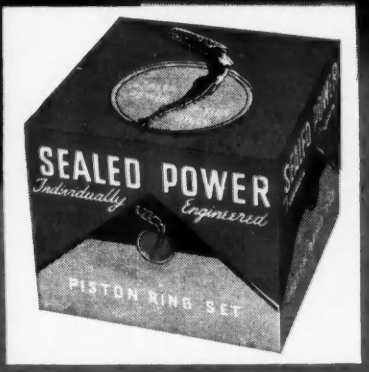
The crankshaft is of seven-bearing type with nine counterweights, statically and dynamically balanced. Main and connecting rod bearings are of replaceable precision type. Full pressure lubrication and full crankcase ventilation also have been provided.

(TURN TO PAGE 105, PLEASE)



Around the World

Sealed Power



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The only ring with the Full-Flow Spring

DOES THE WORLD'S BEST JOB OF OIL CONTROL EVEN IN

BADLY TAPERED AND OUT-OF-ROUND BORES!

DOUBLE THE DRAINAGE WITH HALF THE DRAG!

SEALED POWER CORPORATION • MUSKEGON, MICHIGAN

Sealed Power Piston Rings

BEST IN NEW TRUCKS BEST IN OLD TRUCKS

Retired Bus Converted to Cinder S

Intermittent man-hours and idle spreader body converts retired bus into cinder spreader for $700 labor cost

YOUR CLIMATIC CONDITIONS are considered to be on the mild side. Yet we do encounter severe cold, snow and sleet resulting in icy roads. To continue service and keep our schedules under these conditions, we have found it necessary to sand and cinder our routes to provide safe transportation, not only for our buses but for other vehicular traffic. For this purpose, we use a converted bus chassis with a spreader body.

Our converted sander and cinder spreader is the result of a compromise. We had a truck for this purpose but its useful days had come to an end and replacement was necessary. A large investment for new special equipment was out of the question, inasmuch as this type of unit would operate only a 1000 miles or less annually.

At this time, we happened to have some old buses which were due for replacement. We decided to convert one of these, a 1935 ACF 30-passenger bus for this service. This particular vehicle had been a faithful work-horse for over 1,000,000 revenue miles.

Spare-Time Project

USING a few spare minutes or a few hours whenever they became available, the reconversion was completed in one summer. First the entire rear end was cut off directly behind the extreme rear spring hangers. The body was cut away at the window sill level leaving only the first two front windows. The rear window and roof section was carried forward and then joined to the front portion, providing a large and roomy cab.

A 6½ cu.-yd. spreader body, salvaged from the old truck chassis, was then mounted on the rear platform with the spreader mechanism overhanging the rear.

Additional helper leaves were added to the springs to compensate for the increase in loaded weight.

On the left side of the cinder hopper, we mounted the small gasoline power unit which drives the cinder feed and spreading mechanism. This unit is started from within the cab. The clutch also was designed and constructed so that it could be engaged from within the cab, by means of magnet valves and an air-operated door engine.

We're Declaring a Dividend!

SAVE THIS TAG FOR THE BENDIX DRIVE
$.50
W. B. D. EXCHANGE ALLOWANCE CREDIT
The retail purchaser of this new genuine Bendix Drive is entitled to a credit allowance of $1.00, which applies to the purchase price of the complete unit, in exchange for the worn Bendix Drive (WBD). All other classes of trade receive a merchandise credit allowance. No merchandise credit allowed unless this tag is returned with the worn Bendix Drive to our central distributor.
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And the dividend is for you whenever you choose to use it. Bendix* Starter Drive—the finest and most reliable starter drive in the industry—offers a refund plan that will bring you double profits. There's a profit from the sales of new starter drives, and a profit from the return of the used drive to the Bendix Drive Central Distributor. It truly pays dividends to use only genuine Bendix Starter Drives on every job. *REG. U. S. PAT. OFF.

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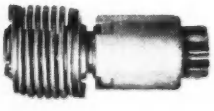


RETURN THE OLD ONE WITH THIS TAG →

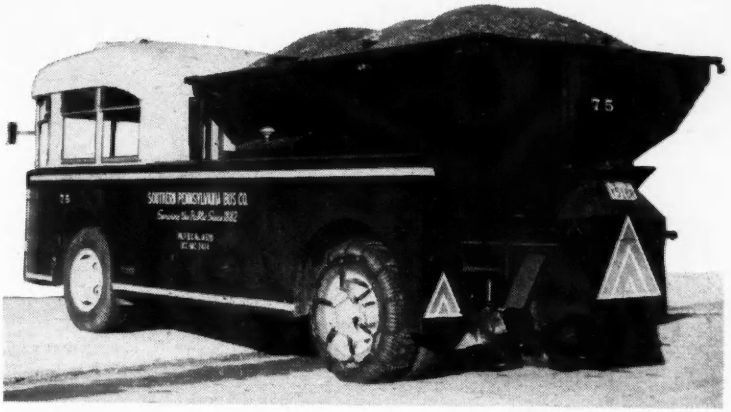
THEY'RE WORTH MONEY! TO YOU

ECLIPSE MACHINE DIVISION of ELMIRA, NEW YORK

Bendix AVIATION CORPORATION

Spreader

By William H. Powelson
Superintendent of Equipment
Southern Pennsylvania Bus Co., Chester, Pa.



Rear view showing spreader body. Front view shown on opposite page

An a-frame also has been adapted to fit on the front of this vehicle. A plow attachment thus can be used if ever the need arises.

The weight of the chassis with the cab is 8675 lb and the spreader body is 4125 lb. A load of 10,000 lb of cinders or sand results in a GVW of 23,800 lb. Wheelbase is 158 in., overall length 250 in., and width 96 in.

Inasmuch as all of the materials for the reconversion were already available, the entire direct cost was for labor which was $700.

To further increase the operating efficiency of this vehicle a short-wave radio was installed in the cab. This feature permits prompt dispatch of the driver to danger areas on the highway as they are reported.

This conversion has been well received by its operators, the company drivers because of its roadworthiness, due to the low center of gravity, and the similarity of layout and operation to the vehicles which they drive daily.

The city also derives some benefit from our cinder spreader. Knowing that our equipment is sure to clear our routes, the city concentrates on those avenues over which our vehicles do not travel.

Thus our old '35 ACF is turned out into "white pastures," and continues to be of service to its younger sisters.

"That tree in Brooklyn is a stump now!"

The Triborough Bridge and Tunnel Authority Chose

THE

BIEDERMAN

TRUCK

because of its

- *Sturdy Construction*
- *Dependable Power*
- *Capacity for Big Loads*
- *Advanced Design*
- *Accessibility of All Parts*

FLEET OPERATORS: Let us send you complete specifications of the Biederman National Standard Model. Compare them with any other truck on the market and you will then understand why the Triborough Bridge and Tunnel Authority chose Biederman trucks for their reliability.

For complete information write, wire or phone.

BIEDERMAN MOTORS CORPORATION
CINCINNATI, OHIO

. . . C. H. LEET, manager of the Exide Pittsburgh Branch of the Electric Storage Battery Co.

. . . ROBERT R. GREENWALT, assistant sales manager of Airtex Automotive Division, Fairfield, Ill.

NEW SPECIFICATIONS

the YANKEE "920"

FLASHING TRUCK DIRECTIONAL SIGNALS

AMBER LAMPS (front)

RED LAMPS (rear)

for use on any truck in any state

contact YANKEE today!

Yankee "920"—the complete 4-lamp set with flasher switch and wiring—is the last word in truck directional signals . . . meets the new S.A.E. specifications for all Class A vehicles, those over 80" in width. New type 4 1/2-inch lamps are finished in black baked enamel over corrosion-resistant "bonderized" steel. The "920" is a money item—cash in on it.

YANKEE METAL PRODUCTS CORP., NORWALK, CONN.

. . . KEN SHERWOOD and FRANK L. GROSS appointed representatives by the Radiator Specialty Co. for the Portland, Ore., and Denver districts respectively.

. . . RAYMOND CLAY, new district manager of Maremont Automotive Products for Virginia, Washington, D. C. and a part of Maryland.

. . . L. L. COLBERT, president of the Dodge division, who has been elected a vice president and director of the Chrysler Corp., and GEORGE W. TROOST, comptroller, who has been named a vice president.

. . . CHARLES J. DAVITT, appointed director of traffic of the Budd Co.

. . . PAUL H. SMITH, as sales manager for Hellwig Products Co., Inc.

. . . RODERICK H. CLARKE, named Autocar district manager in Los Angeles over the Southern California sales area.

. . . W. A. (BILL) HILL, named general manager Burndy Canada Ltd., Toronto.

. . . BRYCE W. KELL, appointed district sales head by the Burndy Canada Ltd., Toronto, electrical connector manufacturers.

. . . ROY BUNSTON, named chief sales engineer by the Burndy Canada Ltd. He was formerly associated with Canada Cement Co.

. . . FRED MCLENAGHAN, sales engineer for the Burndy Canada Ltd., manufacturers of electric connectors.

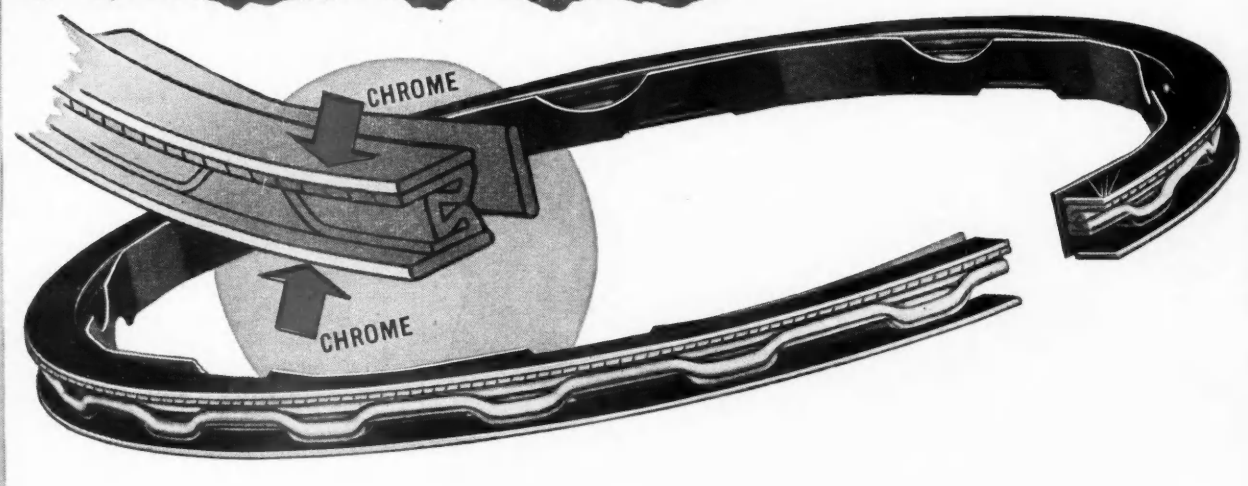
. . . SANFORD M. WAGNER, elected vice president in charge of sales for the Ethyl Corp., N. Y. C.

. . . HUNTINGTON ELDRIDGE, director of distributor and national account sales activities of factory field men of the Alemite Div. of Stewart-Warner Corp., Chicago.

. . . AL THOMSON, named sales engineer for Ontario in the Toronto office of Burndy Canada Ltd., manufacturers of electric connectors.

(TURN TO PAGE 98, PLEASE)

HASTINGS USES CHROME WHERE IT DOES THE MOST GOOD . . . ON THE OIL CONTROL RING!



THE CHROME-FACED STEEL-VENT FOR HEAVY DUTY USE

No set of piston rings is ever better than its oil ring. Compression rings just can't function after the oil ring is worn out.

So Hastings gives you chrome-plating where it is most needed—on the oil control rings!

The Chrome-Faced Steel-Vent and its companion ring, the Chromlube, are doubling and tripling expected life of piston ring sets under some of the most difficult operating conditions in the heavy duty field. Two years actual field experience prove this.

For longer life, greater resistance to scuffing and less cylinder wall drag, install a Hastings Chrome Set. Available for nearly all trucks and tractors and for 16 passenger cars.

HASTINGS MANUFACTURING COMPANY • HASTINGS, MICHIGAN
Hastings Ltd., Toronto

HASTINGS STEEL-VENT PISTON RINGS

CHROME-FACED FOR HEAVY DUTY SERVICE

Introducing . . .

Continued from Page 96

. . . SIDNEY G. HARRIS, sales engineer for the Magnus Chemical Co.

. . . ROBERT G. HOLMES, appointed branch manager of Chicago sales office for Morse Chain Co., Div. of Borg-Warner Corp.

. . . HAROLD DUNCAN, promoted to assistant Southwest regional manager for the Eutectic Welding Alloys Corp.

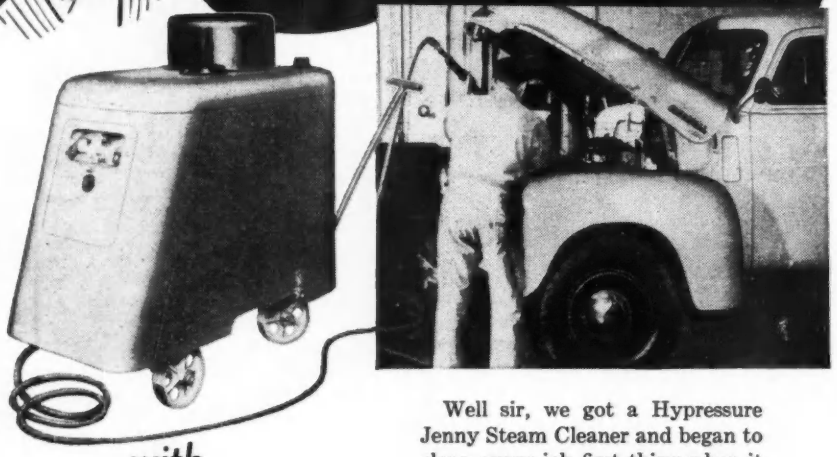
. . . B. HERBERT LEE, appointed advertising manager of the Lee Tire & Rubber Co.

. . . CLIFF STOREY, transferred from Albany to handle sales promotion for Nurlizer, Bearing Adjusters, Plastigage and Manulathe for the Perfect Circle Corp., Hagerstown, Md.

. . . RICHARD W. "DICK" DICKEY, appointed district manager Albany, N.Y. area for Perfect Circle Corp.

. . . WALTER E. MCARTHUR, as manager of industrial sales of Nelson Stud Welding Div. of Morton Gregory Corp.

MAINTENANCE COSTS *Can* BE REDUCED and PROFITS INCREASED



with HYPRESSURE Jenny STEAM CLEANER

I know! I thought we had ours trimmed to the bone. Our mechanics were consistently equalling or bettering time study standards on most jobs. Yet I knew they had to dig through mud and grease to find parts, and were constantly wiping grease from their hands and tools. I figured if I could save that lost motion we could do even better.

Well sir, we got a Hypressure Jenny Steam Cleaner and began to clean every job first thing when it came into the shop. You may think I'm exaggerating, but our figures show that such lost motion was costing us 25% to 40% of our mechanic's time! I know the figures are right because our cost per job has dropped about the same amount.

I don't know how we ever got along without a Hypressure Jenny before, because it is the most profitable equipment we ever bought. Why don't you write for a copy of the new booklet, "1001 Ways To Extra Profits" and see how Hypressure Jenny can save your time and money? It's free for the asking—no obligation. Write today!

HYPRESSURE JENNY DIVISION
HOMESTEAD VALVE MANUFACTURING COMPANY
"Serving Since 1892"
P. O. BOX 90 CORAOPOLIS, PA.

. . . WILLIAM A. DELGER, promoted to vice president of manufacturing; DON J. PEEPS, to vice president of engineering; JOHN M. ROBINSON, to vice president and treasurer; FRANK R. PITT, to secretary; R. MILES BOOTH, to assistant secretary and assistant treasurer of the DeVilbiss Co., Toledo, Ohio.

. . . J. M. DONAHUE, named manager of Atlantic Div. with headquarters in Philadelphia, by the Mack-International Motor Truck Corp.

. . . GORDON WINTERS, in charge of new factory sales and service branch, Oakland, Cal., for the Towmotor Corp.

. . . RANDALL SNOW, named assistant general sales promotion manager of the Walker Mfg. Co.

. . . GEORGE E. STOLL, and C. S. HARDING MOTT, elected to the board of directors of the Bendix Aviation Corp.

. . . DONALD A. FRULAND, elected to the position of assistant treasurer of the Thermoid Co.

. . . W. H. FARMER, as southwest regional truck and fleet sales manager, Ford Motor Co.

. . . JOSEPH J. MIKITA, promoted to assistant technical manager in Petroleum Chemicals Div., E. I. du-Pont de Nemours & Co.

. . . GERARD B. JOHNSON, appointed general sales manager of Joyce Bros. Storage & Van Co.

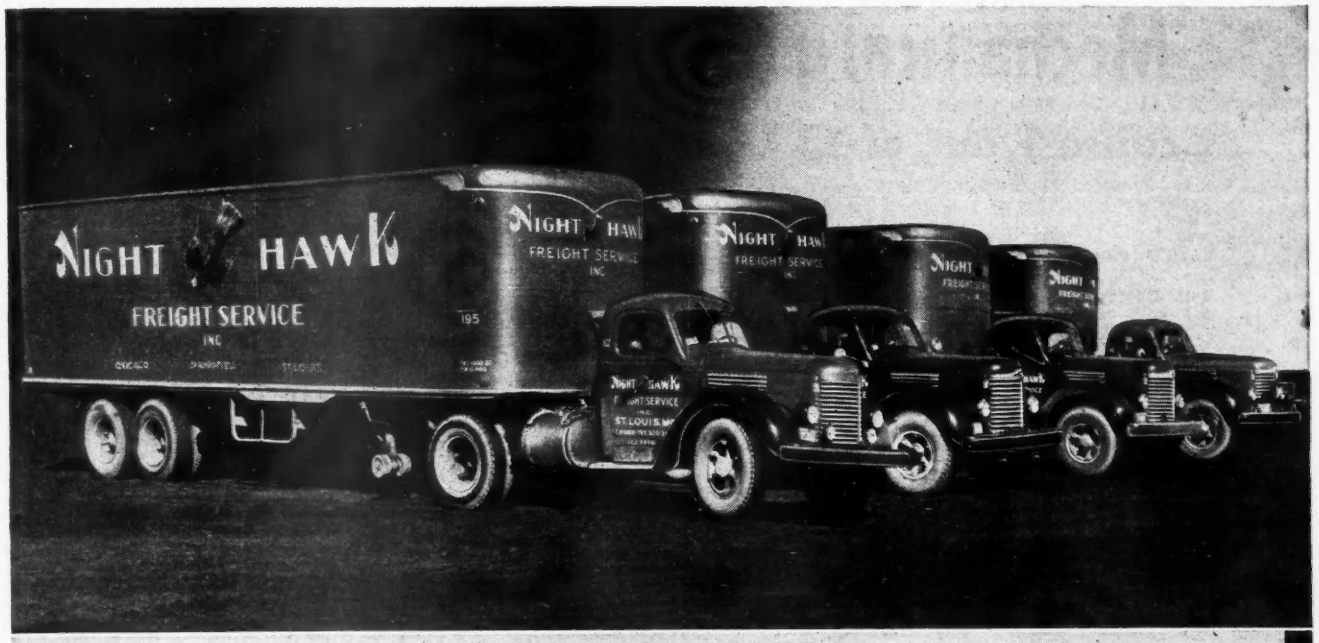
. . . ALBERT E. KELEBER, JR., as manager of mobile radiophone sales of Raytheon Mfg. Co.

. . . J. PAUL STANLEY, appointed field manager of truck tire sales in the Associated Lines division of the B. F. Goodrich Co.

. . . HENRY A. HAAS, appointed manager of Kraft service and accessory sales at General Tire & Rubber Co.

. . . GEORGE A. SAUER, as supervisor of division offices, Merchandising Div., The Electric Auto-Lite Co.

(TURN TO PAGE 200, PLEASE)



ONE OF THE FEATURES THAT SOLD US *Wagner Air Brakes* IS THE *Rotary Air Compressor*

NIGHTHAWK FREIGHT SERVICE, INC.
ST. LOUIS 4, MO.

October 12, 1949

Wagner Electric Corporation
6400 Plymouth Avenue
St. Louis 14, Missouri

Gentlemen:

Maintenance economy is a factor that must be considered if over-the-road fleet operations are to be profitable.

For this reason we are especially careful in the selection of all material and equipment used on our fleet. It must be of high quality to enable it to stand up under hard use.

Our experience with Wagner Air Brakes has been very satisfactory. They have what it takes to operate efficiently and economically in tough, over-the-road service.

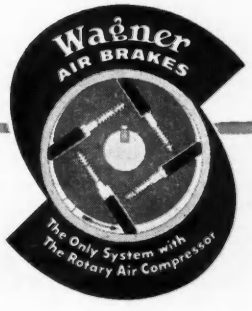
One of the features that sold us on Wagner Air Brakes is the Rotary Compressor. After years of operation we have not had a single compressor failure — they've got to be good to stand up like this on many of our hauls where brake applications are frequent.

Very truly yours,
NIGHTHAWK FREIGHT SERVICE, INC.
G. Harrison
Garage Foreman

FOR BRAKE SERVICE ECONOMY
...Wagner Air Brakes are YOUR BEST BUY

It takes men like Mr. F. Harrison, who are really responsible for continuous, safe fleet operation to evaluate the worth of air brakes. For braking efficiency and brake service economy, Wagner Air Brakes are your best buy because Wagner is the only system with the famous *Rotary Air Compressor.*

Cost-wise truck operators across the nation know that Wagner Air Brakes offer greater value than any other brake. For brake safety and economy install Wagner Air Brakes on your trucks, tractors, trailers and buses. When you order new equipment specify WAGNER. Write for Bulletin KU-50.



E50-6

Wagner Electric Corporation
6470 Plymouth Avenue, St. Louis 14, Mo., U. S. A.

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID...NoRoL...CoMaX BRAKE LINING...AIR BRAKES...TACHOGRAPHS...ELECTRIC MOTORS...TRANSFORMERS...INDUSTRIAL BRAKES

Mechanical Failures

cause 1 out of 13 accidents

Brakes, tires, engine defects lead mechanical failure list. ICC 1948 report indicates slight decrease in accidents, with buses showing better records

Mechanical Defect Accidents—1948	Property-Carrying Vehicles	Passenger-Carrying Vehicles
No. of Accidents	1208	140
No. of Fatalities	75	4
No. of Injuries	611	354
Property Damage	$2,636,895	$151,773
No. of Mechanical Defect Accidents of All Accidents	1 Out of 13	1 Out of 37

MOTOR carriers, for the year 1948, reported to the Interstate Commerce Commission 1320 accidents which were caused by mechanical defects or failures. This represented 6.2 per cent of the 21,419 accidents of all types reported for that year. As a result of these mechanical defect accidents, 79 persons lost their lives, 953 persons were injured, and property damage totaled $2,756,436. Compared with 1947, this constitutes a minor decrease in number of accidents and property damage, substantial decrease in injuries, and slight increase in the number of fatalities.

Mechanical Defect Accidents

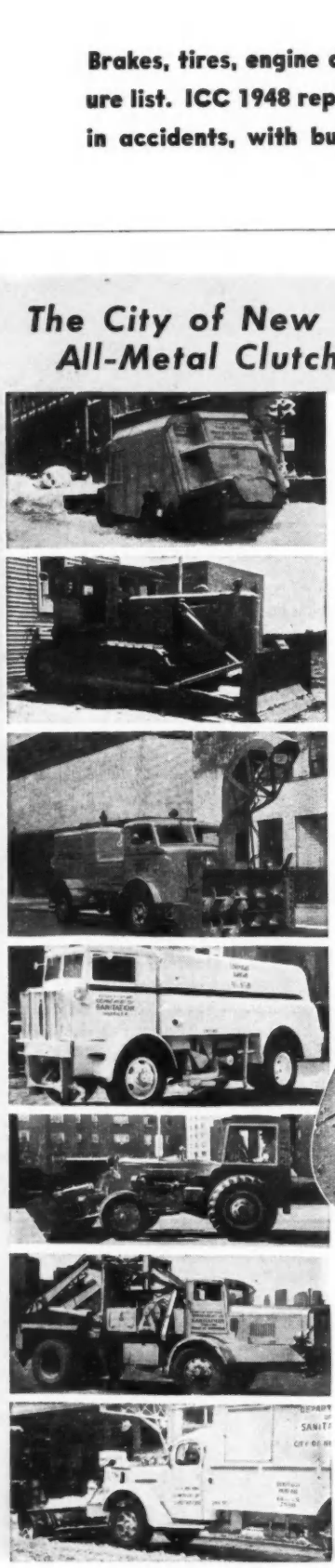
Type of Defect	Number	Pct. of Total
Brakes	467	34.7
Tires	158	11.7
Engines	119	8.8
Steering	81	6.0
Coupling devices	110	8.2
Wheel and associated parts	75	5.6
Lights	69	5.1
Spring and associated parts	61	4.5
Fuel lines and fuel tanks	42	3.1
Axles and differentials	31	2.3
Other defects	135	10.0
Total defects	1,348	100.0
Total defect accidents	1,320	
Total all reported accidents	21,419	
Percent defect accidents of all accidents	6.2	

Brake accidents, more so than in any previous year, constitute the main problem. For 1948, 34.9 per cent of the accidents were attributable to defective brakes. Accidents due to tire failures are second most frequent but, for 1948, numbered only one-third as many as did "brake accidents." Engine failures, coupling device defects, and steering failures are the next most frequent causes of mechanical defect accidents.

For 1948, 16.4 per cent of the accidents were of the (vehicle) "standing" type. This percentage is less than for any previous year but even this relatively small percentage resulted in 50.6 per cent of the fatalities, 25.1 per cent of the injuries and 13.9 per cent of the property damage.

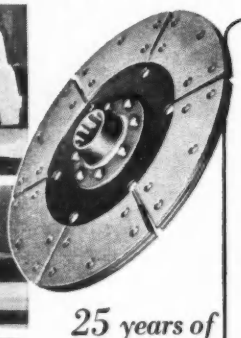
The record for 1948, in general and considering the mileages operated, indicates a slight improvement as regards property-carrying operations and a substantial improvement for bus operations. Mechanical defect accidents involving buses constituted only 10.4 per cent of all mechanical defect accidents.

The City of New York uses Velvetouch All-Metal Clutch Plates and Facings



because VELVETOUCH Lasts Longer

For year-round dependability and maximum economy the City of New York specifies Velvetouch . . . the all-metal facing that out-performs and outlasts 'em all! In heavy weather, when snow bound streets put extra strain on clutch plates and facings . . . Velvetouch keeps trucks and tractors "on the job" with fewer adjustments, fewer breakdowns . . . because Velvetouch is built to take it! Send for details today.



THE S. K. WELLMAN CO.
WAREHOUSING CENTERS

ATLANTA . 119 14th St., N. E.
BOSTON . 171 Brighton Ave.
CHICAGO . . 2800 S. Parkway
CLEVELAND . 1392 E. 51st St.
DALLAS . . . 3407 Main St.
LOS ANGELES 1110 S. Hope St.
PHILADELPHIA 97 E. Montana St.
PORTLAND 636 N. W. 16th Ave.
SAN FRANCISCO 424 Bryant St.
TORONTO, ONTARIO, CANADA
The S. K. Wellman Co., of Canada, Ltd. 2839 Dufferin St.
WASHINGTON, D. C., OFFICE
1101 Vermont Ave., N. W.

25 years of service 1924-1949

FOR BRAKE AND CLUTCH USE Velvetouch

THE S. K. WELLMAN CO.
1374 E. 51st St • Cleveland 3, Ohio

This resulted from a 26 per cent decrease from 1947 which year, in turn, had a decrease of 22 per cent from 1946. Property carriers had an 0.7 per cent decrease from 1947 to 1948 and this contrasts with an increase of 23 per cent between 1946 and 1947.

A study of mechanical accidents involving fires shows a decrease in the number of accidents, number of injuries, and amount of property damage. Fatalities, however, increased from six to 13. A characteristic of these accidents is their severity. The fatality rate is 0.085, the injury rate 0.26, and the property-damage per accident $8043. Compared with all mechanical defect accidents, these accidents are more severe from a fatality and property damage standpoint but less severe on an injury basis. The reason for these variations is the fact that only a few of these accidents involve buses and this, in turn, results in a low injury rate.

Brake Accidents

BRAKE accidents are becoming, more than ever, the predominant type of mechanical defect accident. Both numerically and as a percentage of all such accidents, "bad brake accidents" are increasing as is evidenced by an increase from 436 such accidents in 1947 as compared with 467 in 1948. This increase was noted in contrast with an overall decrease in mechanical defect accidents during this same period. As a result, "brake accidents" during the latter year constituted 34.7

Mechanical Defects Involving Fire

Type of Defect	Number of Accidents	Property Damage
Tires	44	$439,968
Lights	25	102,537
Fuel lines	24	194,421
Engines	19	135,204
Brakes	15	177,700
Steering	5	45,324
Wheels	4	23,550
Exhaust	3	4,421
Batteries	2	9,500
Springs	2	22,700
Axles	2	17,800
Driveshaft	1	15,000
Coupling devices	1	3,500
Miscellaneous	4	23,450
Not specified	2	7,500
Total	153	$1,222,575
Corrected total	152	$1,222,415

per cent of all mechanical defect accidents as compared with 31.0 per cent for 1947 and 28.9 per cent for the period 1944-1948, inclusive.

Engine Accidents

Accidents caused by engine defects decreased by 22 per cent between 1947 and 1948. There were 119 such accidents during the latter year and this number is less than for any year since 1942. The decline was accomplished as a result of fewer accidents by both passenger and property carriers. Both "moving" accidents and "parked" accidents were fewer. Unfortunately, in contrast with the lessened number of accidents, fatalities, all of which were the result of property-carrying accidents, increased to 22 in 1948 as compared with 12 for 1947.

Tire Accidents

For buses, all six of the tire accidents involving moving buses were the result of front tire failures. On property-carrying vehicles in accidents of the type where tire failure resulted in loss of control, 42 out of 78 accidents were the result of front tire failures. Since front tires probably do not constitute over one-fifth the total number of tires on the average vehicle involved, this would indicate that a front tire failure is almost six times as likely to result in loss of control. All 48 front tire failures resulted in "moving" accidents; 24 out of 41 rear power unit tire failures were "moving" accidents; and 39 out of 61 trailer tire failures were of this type. A large percentage of the

(TURN TO PAGE 160, PLEASE)

Where Money's at Stake-Protect Your Investment with Hardware that's Strong Dependable-Durable-Safe!
No. 12
No. 60-6L
HANSEN
HARDWARE for Commercial Bodies
Hansen
Above, at left—No. 12 Leaf-Type Steel Hinge. 3-ply. Size, 12" strap, 2¼" wide. Spot-welded leaves. Above, at right—No. 60-6L Lock, fitted with cylinder and two keys. Size, 6½" long, 7¼" high. 1¼" hardened striker bolt. Lock is tamper-proof.

MONEY by the millions is hauled in the Brinks Express armored car shown. It is fitted with Hansen Special Lock No. 60-6L and Leaf-Type Steel Hinges, illustrated. Lock has cylinder and spring light enough to permit opening door from outside with key.

Hansen Hardware is especially adapted to the varied requirements of body builders, fleet operators and designers. Rugged, simple in design, easy to apply and durable, Hansen stands the test of continual service.

WRITE FOR CATALOG

A. L. HANSEN MFG. CO. 5047 RAVENSWOOD AVE. CHICAGO 40, ILL.

New Truck Registrations by Makes by States*

STATE		Auto-car	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge	Fed-eral	Ford	FWD	GMC	Inter-na-tional	Ken-worth	Mack	Pon-tiac	Reo	Ster-ling	Stude-baker	White	Willys	All Others	Total
Alabama	Nov.			731	1	2	233	2	436		191	176		14	2	5		121	7	62	4	1,987
	11 Mos.	1		8228	18	17	2348	*1	3910		1930	1403		92	6	34		1099	98	635	35	19,385
Arizona	Nov.			227	2	1	60	1	181		53	20	3	3		5		51	2	22	1	632
	11 Mos.	1		1775	13	17	610	4	1294	2	437	300	6	8	1	28	2	488	18	205	43	5,250
Arkansas	Nov.			664			160		371		112	77		1		2		94	3	29	2	1,515
	11 Mos.	2		8608	46		2073	4	4950	1	1848	1356		22	2	89		1276	34	791	30	21,132
California	Nov.	6		1370	18	34	431	2	996	2	398	252	15	25	4	18	7	281	37	79	29	4,002
	11 Mos.	84	19	18651	233	409	6338	32	10041	43	5012	3800	119	179	19	198	62	3709	387	1311	331	50,777
Colorado	Nov.			418	9	2	101		233		76	89						69	2	37	1	1,037
	11 Mos.	1		4506	83	12	1390	15	2085	2	1170	1020	2	8	1	28		802	43	584	13	11,786
Connecticut	Nov.	3	3	166	7	1	82	5	161		38	84		16	2		1	28	5	48	3	653
	11 Mos.	47	29	2073	70	71	857	28	1310	5	470	785		143	5	35	2	376	42	313	23	6,684
Delaware	Nov.	3	1	67	1		24		73		8	17		3	1			14	1	1		214
	11 Mos.	8	9	913	16	5	288	1	734		194	282		9	10	6		112	17	50	10	2,684
Dist. of Col.	Nov.	1		80	6	2	35		49		16	9		6	1		2	4	3	7		221
	11 Mos.	28	6	830	26	52	435	19	546		203	262		41	12	17	5	64	35	65	11	2,657
Florida	Nov.	1		740	20	11	328	1	647		181	176		39	2	9		146	23	93	1	2,418
	11 Mos.	3		6426	115	57	2305	14	3545		1267	1292		192	3	77		1069	112	842	44	17,363
Georgia	Nov.		3	737	5	1	172		547		127	100		12	5	5		100	7	29	3	1,853
	11 Mos.	3	4	9611	101	18	2909	19	6127		1937	2143		153	38	116		1498	148	826	37	25,688
Idaho	Nov.			187	4		56		182	1	66	45	3			1		48	2	36		631
	11 Mos.	1		2275	86	2	826	7	1287	10	899	782	44	15		33		680	19	576	27	7,589
Illinois	Nov.	3		1297	39	12	426	1	723	2	188	361		13	2	26		171	15	43	5	3,327
	11 Mos.	66	10	17661	463	234	5612	42	8482	16	3011	5468		209	21	257	2	2489	527	1077	163	45,810
Indiana	Nov.		2	676	5	8	325	1	599	1	140	237		10	3	18		137	42	29	1	2,234
	11 Mos.	12	11	7752	104	128	2892	25	4874	4	1983	3059	1	110	13	120		1882	286	623	63	23,942
Iowa	Nov.			744	8	5	211	1	487	1	62	224		10		5		96	7	26	4	1,891
	11 Mos.	9		8933	154	35	2790	13	4751	12	1508	2969	1	80	8	74		1473	79	663	66	23,618
Kansas	Nov.			609	5	1	135		394		92	159		1	6	3		56	8	38	4	1,511
	11 Mos.		1	8520	88	22	2182	25	4001	1	1718	2344	1	10	19	67		1293	75	555	50	20,972
Kentucky	Nov.			781	6	4	205		450		187	198		2	3	10		93	11	48	2	2,000
	11 Mos.	5	1	7392	84	38	2001	17	4009	1	1753	1778		47	8	52		890	109	1282	39	19,506
Louisiana	Nov.			414	6		134		344		81	85		8	1	2		65	6	18	1	1,165
	11 Mos.	2		6324	101	16	1808	5	4415	2	1563	1361		59	6	29		1133	81	550	53	17,508
Maine	Nov.			148	1	1	51	1	143		60	44		8	5			26	3	8		499
	11 Mos.	9	15	1921	4	8	607	6	1075		695	624		70	11	46	1	304	40	195	14	5,645
Maryland	Nov.	5	3	219	6	3	105	5	242		43	86		7		8		28	3	21	1	785
	11 Mos.	39	56	3202	41	53	1379	38	1935		667	969		122	6	63	1	355	99	234	37	9,294
Massachusetts	Nov.	14	10	224	4	14	152	5	223		45	122		18	1	6	1	51	24	9	1	924
	11 Mos.	122	96	3387	69	139	1795	14	2476	7	767	1273		230	7	109	40	683	226	247	23	11,710
Michigan	Nov.	1		920	2	6	281	5	546		114	105		5	1	3		74	5	18	2	2,088
	11 Mos.	25	3	12664	89	242	3586	53	8227	2	2448	2054		148	10	92		1306	173	564	103	31,789
Minnesota	Nov.			468	6	4	155	3	302	1	80	153		5				87	6	11		1,281
	11 Mos.	48		7856	85	54	2201	23	4138	6	1384	2586	5	128	8	48		1785	73	380	54	20,802
Mississippi	Nov.			682	6		180		446		192	119		7	2	3		132	1	29	1	1,900
	11 Mos.	1		6982	43		1854	3	3548		1910	1232		36	3	29		977	32	555	26	17,231
Missouri	Nov.			1152	7	6	314		791		230	238	1	2	2	4		131	15	56		2,949
	11 Mos.	8	1	12322	70	109	3518	1	5463	1	2597	2408	1	52	5	106		1461	204	831	46	29,204
Montana	Nov.			363	4		82	2	343	1	93	145	2			7		87		93		1,222
	11 Mos.	5		2787	78	12	866	17	1706	8	926	1027	18	4	1	61		675	23	816	19	9,049
Nebraska	Nov.			420	15		78	3	272		80	149		2	1	2		76	6	69	2	1,175
	11 Mos.		2	5789	233	3	1414	13	2989	7	1287	2074	9	19	6	29		1134	65	976	47	6,096
Nevada	Nov.			30			14		31		11	8						4		2		100
	11 Mos.	1		494	2	1	194	2	352		192	129		2	1	5	1	167		101	6	1,650
New Hampshire	Nov.	2		89			47		79	1	19	24		13	1	1		14		5		295
	11 Mos.	8	7	958	15	17	394	2	706	1	245	288		60	4	16	1	122	10	122	5	2,981
New Jersey	Nov.	12	16	647	15	17	356	7	826	1	209	229		33	35	12		75	36	67	8	2,603
	11 Mos.	101	178	6416	158	160	2585	79	4251	15	1935	1999	1	346	92	97	6	777	331	713	100	20,340
New Mexico	Nov.			275	1		55		102	1	77	30				1		56	2	21		621
	11 Mos.	2		2886	32	3	834	2	958	1	768	439		18		15		525	32	168	31	6,712
New York	Nov.	37	54	1060	56	23	570	14	949	6	299	387		120	15	27	5	116	63	103	29	3,933
	11 Mos.	342	619	12321	576	360	7048	146	7835	49	3817	4886		1251	45	419	28	1903	943	1433	332	44,345
North Carolina	Nov.	1		1047	1	3	451	4	829		131	133		45	6	4		142	18	46	11	2,870
	11 Mos.	16	1	9298	37	39	2820	17	5618	3	1577	1733		332	14	110	5	1297	183	748	140	23,986
North Dakota	Nov.			290	1		46		190		37	140						41		26		771
	11 Mos.	6		3378	67	3	727	22	2039		630	1492		3		10		623	9	316	10	9,335
Ohio	Nov.	2		1044	16	22	417	11	930		231	325		33	15	20		143	56	57	5	3,327
	11 Mos.	66	10	12840	206	329	4864	115	7500	7	2376	3766		218	82	166		1875	681	1041	112	36,254
Oklahoma	Nov.			856	3	2	269		581		150	152			2	7		94	14	78	2	2,209
	11 Mos.	7		7788	28	39	2603	3	4194	6	1710	2066	1	28	15	70		1205	116	803	30	20,710
Oregon	Nov.			323			101		219		63	49	6	5		4		40	6	37	23	876
	11 Mos.	16		4025	43	32	1581	18	2380	4	1248	1081	58	111	4	34	8	662	97	630	117	12,149
Pennsylvania	Nov.	19	47	1140	26	1	597	9	944		239	281		76	9	26	5	133	57	63	11	3,688
	11 Mos.	197	311	13125	307	73	6405	80	8604	8	3510	4357		744	11	275	25	2204	776	1161	208	42,381
Rhode Island	Nov.	3	2	54	1	2	27		64		4	34		12	5			5	2	2		217
	11 Mos.	58	5	921	32	83	432		701		181	386		73	14	24	9	167	41	113	17	3,257
South Carolina	Nov.			405		1	135		458		113	68		8		2		51	4	29	2	1,276
	11 Mos.	13		4398	28	15	1428	1	2496	3	998	729		100	3	20		530	65	313	19	11,159
South Dakota	Nov.			214	1	1	46	1	127		31	106	2	1				37	1	23	1	592
	11 Mos.			2612	92	4	760	7	1320	9	479	1305	8	6	1	15		510	8	472	30	7,638
Tennessee	Nov.			946	2	1	236		477	1	195	89		7		3		110	3	61	2	2,133
	11 Mos.	6	4	10207	88	29	2858	43	4547	1	2592	2227		152	11	133	1	1295	233	925	87	25,419
Texas	Nov.	2		1990	15	15	857	1	1861		742	607	3	15	4	9		395	36	191	23	6,767
	11 Mos.	66	2	22354	161	136	8559	17	13800		6932	5887	19	173	6	122		3887	422	2477	447	65,467
Utah	Nov.			171	2		51		83		30	43		2	1	3		26	4	14	3	433
	11 Mos.			1732	51	8	619	12	984	4	598	625	13	25	4	32	1	379	35	260	35	5,397
Vermont	Nov.		1	61		2	34		62		17	20		1				10		13		221
	11 Mos.	1	11	917	13	7	384	9	584	1	319	466		11	3	25		282	10	233	14	3,290
Virginia	Nov.	5	5	713	4	1	258	3	660		149	152		8	1	2		78	11	44	4	2,038
	11 Mos.	31	34	7819	66	45	2429	20	4388		1502	1613		127	8	66		974	144	642	60	19,948
Washington	Nov.			341	5	4	139		289		86	138	8	4	2	2	1	42	1	19	7	1,088
	11 Mos.	10		4084	67	52	1713	11	2700		1186	1403	59	47	11	54	12	777	96	554	72	12,908
West Virginia	Nov.		4	281	1	5	84	1	189		56	53		4	1	1		23	3	54		760
	11 Mos.	2	5	3302	36	20	1315	18	2054	16	874	718		31	6	32		387	64	880	42	9,802
Wisconsin	Nov.			911	15	15	264		630	6	161	278		14	7	17		125	26	32	19	2,520
	11 Mos.	13		7700	129	131	2200	22	3942	49	1423	2547		97	18	132	3	1235	169	531	137	20,478
Wyoming	Nov.			108	1		27		98		17	16		1				13		10		287
	11 Mos.	1		1399	56		415	2	739	4	342	388	3	8		17		282	9	343	9	3,985
Total	November, 1949	120	151	27497	359	233	9599	89	20857	25	6020	6832	43	619	148	281	22	4044	585	1956	219	79,699
Total	November, 1948	254	270	23694	707	319	8632	223	14125	61	6764	7854	49	543		580	15	4353	981	5046	486	75,024
Total	11 Months, 1949	1493	1450	318352	4803	3339	108051	1095	180570	311	74996	84959	369	6147	582	3732	215	51044	7523	30703	3447	883,181
Total	11 Months, 1948	2560	2781	278417	10083	5367	106012	3911	213358	788	68959	118258	420	9205		10153	387	46370	10939	71616	5308	964,892

* Data from R. L. Polk & Co.

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EATON

2-Speed Truck

AXLES

In the kind of service that requires extra pulling power and extra speed to make time on the open highway, Eaton 2-Speed Axles provide the perfect balance of power and speed. On trucks that must "take it," Eaton Axles reduce stress and wear—not only on the axles themselves, but on engines and all vital vehicle units. Longer axle life with minimum maintenance cost is assured because Eaton's exclusive forced-feed oiling system provides positive lubrication at all vehicle speeds. Eaton Axles are available for most trucks of 1½ tons and larger. Ask your truck dealer for a road demonstration.

More Than a Million Eaton 2-Speed Axles in Trucks Today

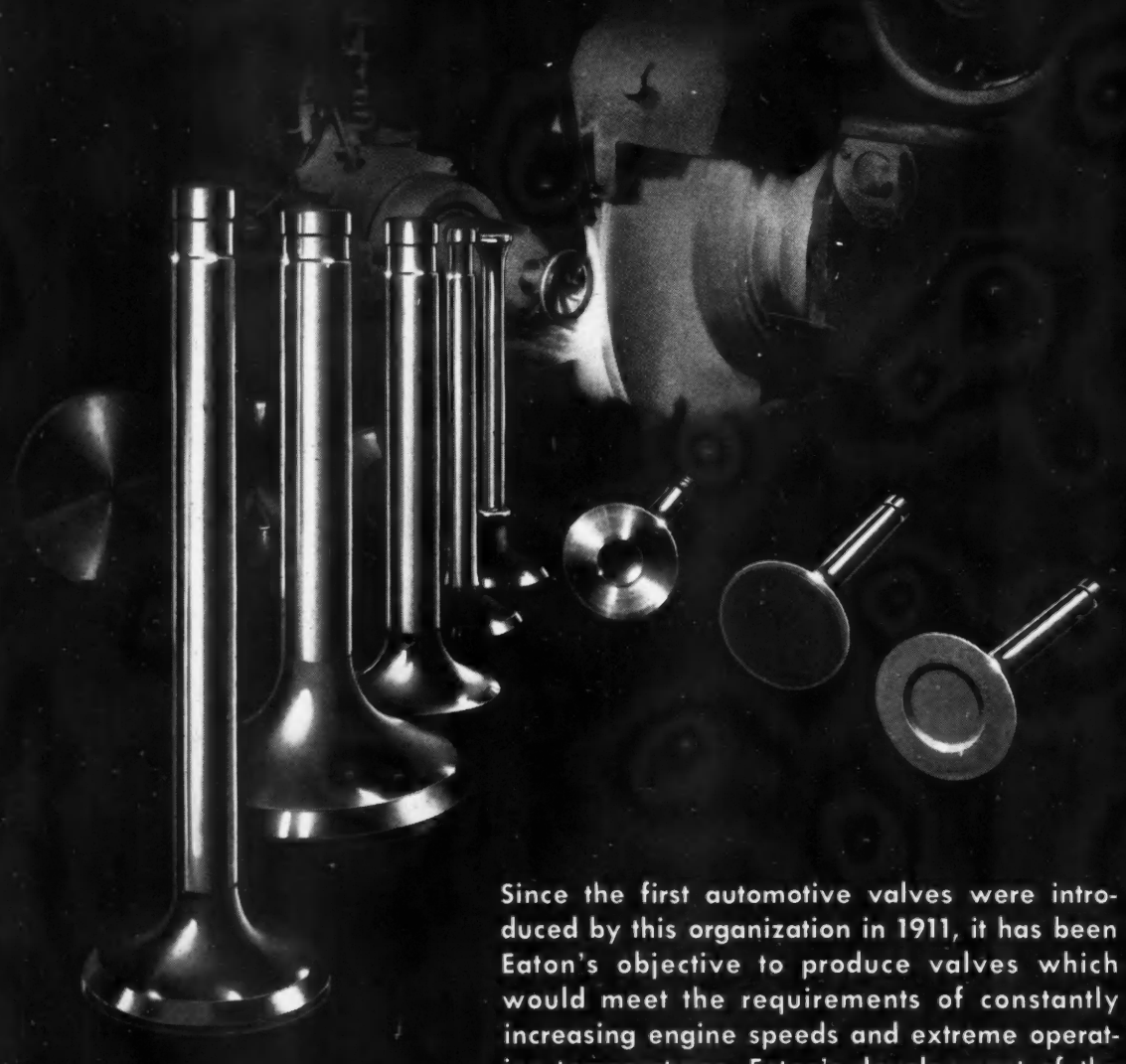
Axle Division

EATON MANUFACTURING COMPANY

CLEVELAND, OHIO

PRODUCTS: SODIUM COOLED, POPPET, AND FREE VALVES • TAPPETS • HYDRAULIC VALVE LIFTERS • VALVE SEAT INSERTS • ROTOR PUMPS • MOTOR TRUCK AXLES • PERMANENT MOLD GRAY IRON CASTINGS • HEATER-DEFROSTER UNITS • SNAP RINGS • SPRINGTITES SPRING WASHERS • COLD DRAWN STEEL • STAMPINGS • LEAF AND COIL SPRINGS • DYNAMATIC DRIVES, BRAKES, DYNAMOMETERS

EATON VALVE DEVELOPMENT has Contributed to Higher Efficiency and Longer Life for Engines in Every Type of Service



Since the first automotive valves were introduced by this organization in 1911, it has been Eaton's objective to produce valves which would meet the requirements of constantly increasing engine speeds and extreme operating temperatures. Eaton's development of the sodium cooled valve in 1923 represents one of the most important single advancements in the history of aviation. Applying the sodium cooled principle to automotive use, Eaton is contributing thousands of miles of additional life to valves in heavy duty truck and bus service. Equally important advancements have been made in valves for passenger car use—valves which deliver a hundred thousand miles and more of dependable service.

EATON
MANUFACTURING COMPANY
VALVE DIVISION
9771 French Road • Detroit 13, Michigan

Dodge Y Models

Continued from Page 92

The electrical system includes resistor type spark plugs; an air-cooled 40-amp generator; voltage-current regulator; automatic spark advance; heavy-duty battery; new starter.

The cooling system is of pressure-sealed type, having a capacity of 34 qt, with a radiator frontal area of 568.75 sq. in. Full length water jackets provide uniform and adequate cooling. A thermostatically controlled by-pass is employed for quicker and more uniform warm-up.

Power Train

A HEAVY-DUTY 13-in. clutch is standard equipment. Lining area is 177.8 sq in., linings being of metal-impregnated woven type. Permanently adjusted eye-bolts are said to compensate for lining wear. A ball-type pilot bearing and permanently lubricated ball-type release bearings provide trouble-free performance.

A five-speed, constant-mesh helical gear transmission, having a torque input capacity of 330 lb ft, is standard on Y-models. Available as optional equipment is a five-speed, helical gear, constant-mesh overdrive transmission. An individual, single power take-off gear is available from either the right or left hand side of the case, so designed as to relieve the load on driving gears. A magnetic drain plug affords extra protection in service.

Balanced weight distribution and highly desirable maneuverability have been achieved by balanced positioning of the engine and front axle. The engine is further forward in the frame and the front axle is further back on the frame than has been the common practice. This design, used on all Dodge trucks, also increases useful body length for a given wheelbase.

Four-wheel hydraulic brakes, with 9½-in. dual diaphragm, sealed, vacuum brake booster unit, are standard equipment. The brake booster is fitted with steel tubes and positive seal-type fittings to keep dirt out of the booster and engine. Front wheel brake cylinders are of stepped diameter type; while rear brakes are of dual-primary type. Brake linings are Cyclebonded, with service braking area of 486.25 sq in. The independent parking brake system has a lining area of 128.5 sq in. A full air brake system with lining area of 531 sq in. is available at extra cost.

Rear axle equipment for the Y Model includes a standard 18,000-lb capacity single-speed hypoid axle with a ratio of 6.83:1 An optional single-speed double-reduction unit having a capacity of 18,000 lb and a ratio of 8.53:1 is also available. In addition, Dodge offers the YA dual-purpose models with an 18,000-lb capacity two-speed axle as standard equipment. This axle has a 6.53/8.53:1 ratio.

For extreme service, Dodge offers a line of 22,000 lb capacity rear axles. Available for the Y Models is a single-speed axle having a 7.4:1 ratio, and a single-speed double-reduction axle having a 9.23:1 ratio. The dual purpose YA Models are also available with a 22,000-lb capacity two-speed rear axle with optional ratios of 6.41/8.37:1 and 7.27/9.49:1. Shift control for the two-speed axles is located on the gear shift lever.

Maximum tire sizes available for various GVW ratings are as follows: 11.00/20-12-ply—for 23,500 and 26,000 lb GVW; 11.00/20-14-ply—for 28,000 lb GVW.

Driver safety and comfort are assured by the provision of the Dodge "Pilot-House" cab. Air-O-ride seats are adjustable to the weight of the driver as well as road conditions.

END

(Please resume your reading on P. 94)

Take it easy . . . . WITH THE NEW DRUM Safety JACK

WITH SWIVEL ACTION

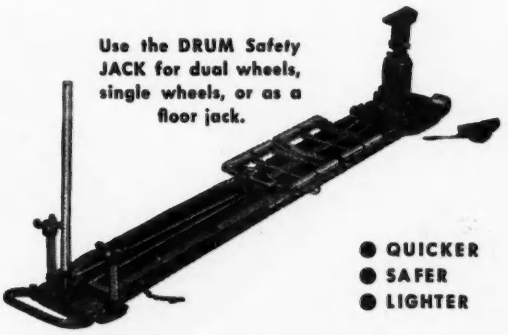
SPOT IT—under any axle, from any angle.

SWING IT—Bring dollies into position for removing wheels without lifting.

LEVEL IT—Pull wheels easily without damage to bearings or seals.

Do tire, brake and bearing jobs faster—without breaking your back or crawling under trucks. This heavy-duty jack works anywhere—under any wheel. One man does two men's work with a DRUM *Safety JACK.*

Use the DRUM Safety JACK for dual wheels, single wheels, or as a floor jack.



- QUICKER
- SAFER
- LIGHTER

DRUM JACK CORPORATION
Subsidiary of The Cleveland Pneumatic Tool Company
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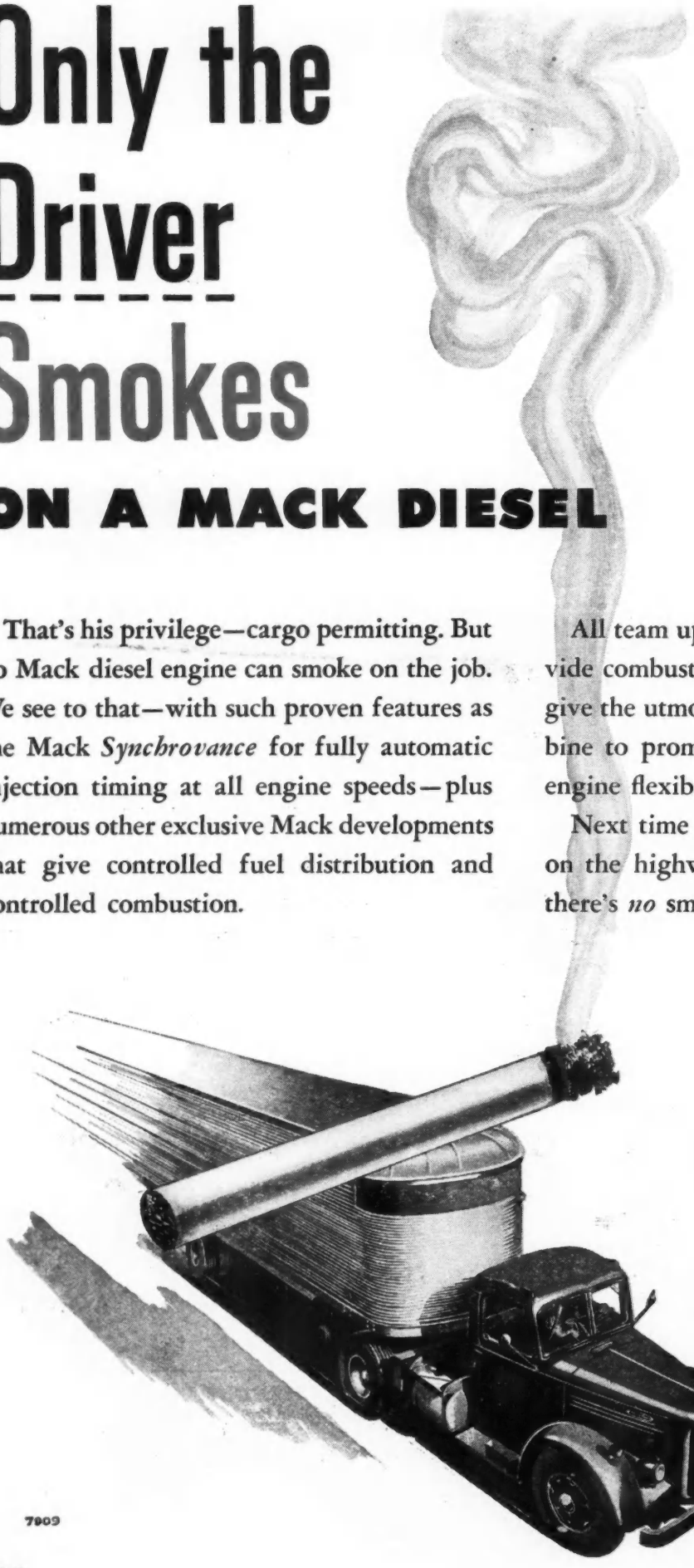
We would like to know more about the DRUM *Safety* JACK.

Company _____

Address _____ *City* _____

Only the Driver Smokes

ON A MACK DIESEL



• That's his privilege—cargo permitting. But no Mack diesel engine can smoke on the job. We see to that—with such proven features as the Mack *Synchrovance* for fully automatic injection timing at all engine speeds—plus numerous other exclusive Mack developments that give controlled fuel distribution and controlled combustion.

All team up in Mack diesel engines to provide combustion that is truly smokeless... to give the utmost in engine efficiency. All combine to promote smoother running, greater engine flexibility, maximum fuel savings.

Next time you see a diesel-powered truck on the highway, check for yourself. Where there's *no* smoke—it's a Mack diesel.

Modernize with

Mack

...outlasts them all!

7909

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Truck Specifications Table

OF CURRENT PRODUCTION MODELS

DATA SUPPLIED BY MANUFACTURERS AND TABULATED BY

COMMERCIAL CAR JOURNAL

Key to Definitions, References and Abbreviations

DEFINITIONS

MAKE AND MODEL

Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO REFERENCES

c.f.—Cab Forward design.
c.o.e.—Cab-Over-Engine design.
(D)—Diesel-engine equipped.
(T)—Designed for tractor use only.
(C)—Converted Ford or Chevrolet Model.

KEY TO ABBREVIATIONS

MAKES—ALL

B—Bendix
BL—Brown-Lipe.
Bu or Bud—Buda.
BW—Bendix-Westinghouse
C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cum—Cummins-Diesel.
Eat—Eaton.
F—Ford.
Fu—Fuller.
G-H—Goodyear-Hawley type.
H—Hotchkiss.
Her—Hercules.
HS—Hall-Scott.
L—Lockheed.
LH—Lockheed front, Wagner "hi-Tork" rear.
LT—Lockheed type front, Timken rear.
LW—Lockheed front, Wisconsin rear.
M—Midland.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Shu—Shuler.
Spi—Spicer
T or Tim—Timken-Detroit Axle Co.
Tw—Timken-Detroit—Westinghouse.
TW—Timken-Detroit—Wisconsin.
WG—Warner Gear.
Wau—Waukesha.
W or Wis—Wisconsin.
Wg—Wagner "hi-Tork"
Ws—Westinghouse.
WW—Westinghouse or Wagner

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group
4R—Forward and rear units of Rear Axle Group.
—All wheels.

BRAKES—SERVICE

Location

4—Four Wheels, front and rear.
4r—Four Wheels, rear only.

Type

I—Internal.
X—External.

Operation

A—Air.
H—Hydraulic.
V—Vacuum.
D or Dp—Dual Primary

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
6—Six wheels.
P—Back of Power Divider.
J—Jackshaft.
T—Transmission.
F—Driveshaft.

Type

D—Tru-Stop disk.
I—Internal.
M—Mechanical.
X—External.
PD—Two drums on rear of power divider.

BRAKE DRUMS

Material

a—Cast alloy iron.
A—American Car Foundry
c—Cast iron.
Cc—Composite Front, Cast Iron in rear.
Ce—Centrifuse.
Cl—Copper iron.
Co—Composite.
D—Dayton.
E—Ermalite.
G—Gunite.
N—Nickel iron.
S—Steel.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type

C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center
Tf—Tapered front.
A—Straight section sidemembers, lined with oak inserts.
Z—Reinforced (X) member frame, box type sections.

REAR AXLE

Final Drive and Type

B—Bevel.
CD—Chain Drive
F—Full-floating.
H or Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
¾—Three Quarters Floating.
½—Semi-Floating
T—Torque Tube

GEAR RATIOS

(**) Only one ratio.

Drive and Torque

H—Hotchkiss (springs).
R—Radius Rods.
L—Parallel Torque Rods
T—Torque Arm.

GOVERNOR STANDARD

Y—Yes.
N—No.

(Turn to Page 108, Please)

(Continued from Page 107)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
	Available																														
1	(c.o.e.)....200				15000	5500●	7.00/20D	8.25/20	Wau BM	6–3⅛x4¼	263	5.9	178	78–2800	7–2⅛x10¼	N	WG T9	4	Tim E100DPH	HF	H	** –6.20	Tim 32502H	L4IHV	314	534	a	TX	.....	10x3x¼	T
2	(c.o.e.)....225				16500	6200●	7.50/20D	8.25/20	Wau BZ	6–4x4¼	320	5.9	235	105–3200	7–2⅛x10¼	N	WG T97	4	Tim E100DPH	HF	H	** –6.20	Tim 32502H	L4IHV	314	534	a	TX	.....	10x3x¼	T
3	(c.o.e.)....250				20000	6400●	8.25/20D	9.00/20	Wau BZ	6–4x4¼	320	5.9	235	105–3200	7–2⅛x10¼	N	Fu 5A330	5	Tim H100DPH	HF	R	** –6.80	Tim 32502H	L4IHV	344	584	a	TX	.....	10x3x¼	T
4	(c.o.e.)....400				22000	6800●	9.00/20D	10.00/20	Wau BZ	6–4x4¼	320	5.9	235	105–3200	7–2⅛x10¼	N	Fu 5A330	5	Tim L100DPH	HF	R	** –6.83	Tim 35000H	L4IHV	370	642	a	TX	.....	12x3x¼	T
5	(c.o.e.)....5.0				23000	7500●	9.00/20D	10.00/20	Wau MZA	6–4¼x4¾	404	5.6	285	130–3000	7–2⅛x12	Y	Fu 5F430	5	Tim L100DPH	HF	R	** –6.83	Tim 35000H	L4IHV	370	642	a	TX	.....	12x3x¼	T
6	(c.o.e.)....55				28000	8100●	10.00/20D	11.00/20	Wau MZA	6–4¼x4¾	404	5.6	285	130–3000	7–2⅛x12	Y	Fu 5F430	5	Tim Q100DPH	HF	R	** –7.80	Tim 26452H	L4IHV	458	846	a	TX	.....	12x3x¼	T
7	(c.o.e.)....550				32000	9600●	10.00/20D	11.00/24	Wau MZA	6–4¼x4¾	404	5.6	285	130–3000	7–2⅛x12	Y	Fu 5F430	5	Tim S200DPH	2F	R	** –7.84	Tim 26452H	L4IHV	576	1054	a	FD	.....	14x3x☆	T
8	(c.o.e.).....				28000	10000●	10.00/20D	11.00/24	Wau 140 GK	6–4⅛x5½	525	6.4	425	172–2600	7–3¼x13⅞	Y	Fu 5A650	5	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA	566	950	a	FD	.....	14x3x☆	T
9	(c.o.e.)....60				28000	10900●	10.00/20D	11.00/24	Wau 145 GK	6–5¼x6	779	6.2	595	240–2400	7–3½x17¾	Y	Spi 7851	4	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA	566	950	a	FD	.....	14x3x☆	T
10	(D) (c.o.e.)....602				28000	11200●	10.00/20D	11.00/24	Cum HB600	6–4⅞x6	672	17.5	500	150–1800	7–4½x16½	Y	Spi 7851	4	Tim R100P	HF	R	–7.40	Tim 26452TW	L4IA	566	950	a	FD	.....	14x3x☆	T
11	Biederman....NSH		130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6–4x4½	339	6.9	272	131–3200	7–2½x10‡‡	N	Fu 5A330	5	TimH700DPH	SF	H	** –7.2	Tim 35000HX	LH4IH	514	744	G	T	60	9x3x¼	C
12	.....NSD		130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6–4x4½	339	6.9	272	131–3200	7–2½x10‡‡	N	Fu 5A330	5	TimH700DPH	2D	H	6.13–8.15	Tim 35000HX	LH4IH	514	744	G	T	60	9x3x¼	C
13	.....NSR		142	171	21000	7420	8.25/20D	10.00/20	Her JXLD	6–4x4½	339	6.9	272	131–3200	7–2½x10‡‡	N	Spi 3541UP	5	TimH110DPH	HFd	H	** –6.4	Tim 35141PX	T4A	.....	.....	G	T	.....	9x3x¼	C
14	.....HL		93	197	30000	12200	10.00/24D	12.00/24	Wau 140 GK	6–4½x5½	525	6.4	425	172–2600	7–3¼x13⅜	Y	Spi 6252A	5	Tim R200	HFd	H	6.41–8.37	Tim 36000TW	T4A	.....	.....	G	T	81	10x3x☆	
15	Brown....R6572T		144	166	33000	.....	11.00.22	12.00/24	Con R6572	6–4¼x5½	572	5.9	440	172–2600	7–3¼x14½	Y	Spi 6252B	5	Tim R100	Hy	H	** –5.28	Tim FE900	Ws4IA	.....	.....	a	2M	67	9½x3½x¼	Tf
16	.....140GKT		144	166	33000	.....	11.00/22	12.00/24	Wau 140GK	6–4½x5½	525	6.4	425	168–2400	7–2¾x13‡‡	Y	Spi 6252B	5	Tim R100	Hy	H	** –5.28	Tim FE900	Ws4IA	.....	.....	a	2M	67	9½x3½x¼	Tf
17	(D)....HB600T		144	166	33000	.....	11.00/22	12.00/24	Cum HB600	6–4⅞x6	672	17.5	500	150–1800	7–4½x16½	Y	Fu 5A650	5	Tim R100	Hy	H	** –5.28	Tim FE900	Ws4IA	.....	.....	a	2M	67	9½x3½x¼	Tf
18	(D)....HRB600T		144	166	33000	.....	11.00/22	12.00/24	Cum HRB600	6–5¼x6	743	15.5	530	165–1800	.....	Y	Fu 5A920	5	Tim R100	Hy	H	** –5.28	Tim FE900	Ws4IA	.....	.....	a	2M	67	9½x3½x¼	Tf
19	(D)....NHB600T		144	166	33000	.....	11.00/22	12.00/24	Cum NHB600	6–5¼x6	743	15.5	575	200–2100	.....	Y	Fu 5A920	5	Tim S200	2F	H	** –6.42	Tim FE900	Ws4IA	.....	.....	a	2M	67	9½x3½x¼	Tf
20	Chevrolet.....HP	905	116	....	4600	▼2570	6.00/16S	158	O-Thrift Mas.	6–3½x3¾	216	6.6	176	92–3400	4– ♦ ♦	N	Own		§3 Own	Hy‡	T	** –4.11	Own	O4IH	150	242	Co	2I	39	5½x2¼x☆	C
21	.....HR	1000	125	....	5800	▼2880	158	7.50/17S	O-Thrift Mas.	6–3½x3¾	216	6.6	176	92–3400	4– ♦ ♦	N	Own		§3 Own	HyF	H	†† –4.57	Own	O4IH	176	272	Co	2I	48¼	5½x2¼x☆	C
22	†Fwd. Control..HT	1015	125	....	7000	▼2685	158	7.50/17S	O-Load Mas.	6–3½x3¾	235	6.7	...	92–3400	4– ♦ ♦	N	Own		§3 Own	HyF	H	** –5.14	Own	O4IH	202	302	Co	2I	.....	5½x2¼x☆	C
23	.....HS	1070	137	....	8800	▼3170	7.00/17S	7.00/18	O-Thrift Mas.	6–3½x3¾	216	6.6	176	92–3400	4– ♦ ♦	N	Own		4 Own	HyF	H	** –5.14	Own	O4IH	248	371	Co	2I	60	7x2¾x☆	C
24	†Fwd. Control..HU	1105	137	....	10000	▼2865	7.00/17S	7.00/18	O-Load Mas.	6–3☆x3¾	235	6.7	...	92–3400	4– ♦ ♦	N	Own		4 Own	HyF	H	** –5.14	Own	O4IH	248	371	Co	2I	.....	7x2¾x☆	C
25	.....TJ	1130	137	....	12500	▼3575	7.00/20S	7.50/20	O-Thrift Mas. ::	6–3½x3¾	216	6.6	176	92–3400	1– ♦ ♦	N	Own		4 Own	HyF	H	▫ –6.17	Own	O4IH	330	478	Co	2I	60	7x2¾x☆	C
26	.....TK	1165	161	....	12500	▼3685	7.00/20S	7.50/20	O-Thrift Mas. ::	6–3½x3¾	216	6.6	176	92–3400	1– ♦ ♦	N	Own		4 Own	HyF	H	▫ –6.17	Own	O4IH	330	478	Co	2I	84	8½x2½x¼	C
27	(School bus)..TL	1310	161	....	12000	▼4115	6.50/20D	7.00/20	O-Thrift Mas. ::	6–3½x3¾	216	6.6	176	92–3400	4– ♦ ♦	Y	Own		4 Own	HyF	H	▫ –6.17	Own	O4IH	330	478	Co	2I●●	.....	8¼x2½x¼	C
28	.....TVS	1450	137	....	15000	▼4220	7.50/20D	9.00/20●‡	O-Load Mas.	6–3☆x3‡‡	235	6.7	193	105–3600	4– ♦ ♦	Y	Own		4 Own	HyF	H	▫ –6.17	Own	O4IH	330	478	Co	2I	60	8½x2½x¼	C
29	.....TWS	1485	161	....	15000	▼4295	7.50/20D	9.00/20●‡	O-Load Mas.	6–3☆x3‡‡	235	6.7	193	105–3600	4– ♦ ♦	Y	Own		4 Own	HyF	H	▫ –6.17	Own	O4IH	330	478	Co	2I	84	8½x2½x¼	C
30	(c.o.e.).....TPS	●1805	110	....	15000	●▼4665	7.50/20D	9.00/20●‡	O-Load Mas.	6–3☆x3‡‡	235	6.7	...	102–3600	4– ♦ ♦	Y	Own		4 Own	HyF	H	▫ –6.17	Own	O4IH	330	478	Co	2I	60½	8½x2½x¼	C
31	(c.o.e.).....TRS	●1840	134	....	15000	●▼4760	7.50/20D	9.00/20●‡	O-Load Mas.	6–3☆x3‡‡	235	6.7	...	102–3600	4– ♦ ♦	Y	Own		4 Own	HyF	H	▫ –6.17	Own	O4IH	330	478	Co	2I	84½	8½x2½x¼	C
32	(c.o.e.).....TSS	●1875	158	....	15000	●▼4830	7.50/20D	9.00/20●‡	O-Load Mas.	6–3☆x3‡‡	235	6.7	...	102–3600	4– ♦ ♦	Y	Own		4 Own	HyF	H	▫ –6.17	Own	O4IH	330	478	Co	2I	108½	8½x2½x¼	C
33	(c.o.e.).....TP	●1805	110	....	16000	●▼4665	7.50/20D	9.00/20●‡	O-Load Mas.	6–3☆x3‡‡	235	6.7	...	102–3600	4– ♦ ♦	Y	Own		4 Own	HyF	H	▫ –6.17	Own	O4IH	330	478	Co	2I	60½	8½x2½x¼	C
34	(c.o.e.).....TR	●1840	134	....	16000	●▼4760	7.50/20D	9.00/20●‡	O-Load Mas.	6–3☆x3‡‡	235	6.7	...	102–3600	4– ♦ ♦	Y	Own		4 Own	HyF	H	▫ –6.17	Own	O4IH	330	478	Co	2I	84½	8½x2½x¼	C
35	(c.o.e.).....TS	●1875	158	....	16000	●▼4830	7.50/20D	9.00/20●‡	O-Load Mas.	6–3☆x3‡‡	235	6.7	...	102–3600	4– ♦ ♦	Y	Own		4 Own	HyF	H	▫ –6.17	Own	O4IH	330	478	Co	2I	108½	8½x2½x¼	C
36	.....TV	1450	137	....	16000	▼4220	7.50/20D	9.00/20●‡	O-Load Mas.	6–3☆x3‡‡	235	6.7	193	105–3600	4– ♦ ♦	Y	Own		4 Own	HyF	H	▫ –6.17	Own	O4IH	330	478	Co	2I	90	8½x2½x¼	C
37	.....TW	1485	161	....	16000	▼4295	7.50/20D	9.00/20●‡	O-Load Mas.	6–3☆x3‡‡	235	6.7	193	105–3600	4– ♦ ♦	Y	Own		4 Own	HyF	H	▫ –6.17	Own	O4IH	330	478	Co	2I	84	8½x2½x¼	C
38	(School bus)..TX	1530	199	....	15000	▼4620	7.50/20D	8.25/20	O-Load Mas.	6–3☆x3‡‡	235	6.7	193	105–3600	4– ♦ ♦	Y	Own		4 Own	HyF	H	▫ –6.17	Own	O4IH	330	478	Co	2I●●	.....	8‡‡x2‡‡x☆	C
39	Corbitt■.....18BG		181	....	18000	.....	9.00/20	10.00/20	Con M6330	6–4x4¾	330	6.1	246	104–2800	7–2½x12	Y	Cla 205V	5	TimH100DPH		H	**–5.29	Tim 32502H	B4IHV	.....	.....	a	TX	.....	8x3¼x¼	T
40	.....22BG		190	....	22000	.....	10.00/20	10.00/22	Con B6371	6–4½x4½	371	6.0	280	100–2600	7–2½x13½	Y	Fu 5A43	5	Tim L100DPH		H	**–5.29	Tim 35000H	B4IHV	.....	.....	a	TX	.....	8x3¼x¼	T
41	.....25BG		200	....	25000	.....	10.00/22	11.00/22	Con B6427	6–4☆x4¼	427	5.9	325	127–2600	7–2½x13½	Y	Fu 5A43	5	Tim Q100P		H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	TX	.....	8½x3☆x☆	T
42	(T).....18TG		137	....	18000	.....	9.00/20	10.00/20	Con M6330	6–4x4¾	330	6.1	246	104–2800	7–2⅝x12	Y	Cla 205V	5	Tim H100P‡‡		H	**–5.29	Tim 32505TW	Ws4IA	.....	.....	a	TX	.....	7½x3¾x☆	T
43	(T).....H18TG		137	....	20000	.....	10.00/20	.....	Con M6330	6–4x4¾	330	6.1	246	104–2800	7–2⅝x12	Y	Cla 205V	5	Tim L100P‡‡		H	**–5.29	Tim 32505TW	Ws4IA	.....	.....	a	TX	.....	7½x3¾x☆	T
44	(T).....22TG		144	....	22000	.....	10.00/20	10.00/22	Con B6427	6–4☆x4½	427	5.9	325	127–2600	7–2½x13½	Y	Fu 5A43	5	Tim L100P‡‡		H	**–5.29	Tim 35000TW	Ws4IA	.....	.....	a	TX	.....	8x3¼x¼	T
45	(T).....H22TG		144	....	24000	.....	10.00/22	.....	Con B6427	6–4☆x4½	427	5.9	325	127–2600	7–2½x13½	Y	Fu 5A43	5	Tim Q100P‡‡		H	**–5.29	Tim 35100TW	Ws4IA	.....	.....	a	TX	.....	8x3¼x¼	T
46	(T).....25TG		148	....	25000	.....	10.00/22	11.00/22	Con R6513	6–4½x5⅝	513	5.9	400	170–2600	7–3¼x—	Y	Spi 6253	5	Tim Q100P‡‡		H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8½x3¼x☆	T
47	(T).....H25TG		148	....	25000	.....	10.00/22	.....	Con R6513	6–4½x5⅝	513	5.9	400	170–2600	7–3¼x—	Y	Spi 6253	5	Tim R100P‡‡		H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8½x3¼x☆	T
48	(T).....28TG		147	....	28000	.....	10.00/22	11.00/24	Con R6602	6–4½x5⅛	602	5.9	484	195–2600	7–3¼x—	Y	Fu 5A650	5	Tim S200P‡‡		H	**–6.42	Tim 26450TW	Ws4IA	.....	.....	a	2D	.....	8½x3¼x☆	T
49	(D) (T).....22TD		144	....	22000	.....	10.00/20	10.00/22	Her DWXD	6–4¼x4¾	404	5.15	320	135–2600	.....	Y	Fu 5A430	5	Tim L300P		H	6.32–8.20	Tim 35000TW	Ws4IA	.....	.....	a	TX	.....	8x3¼x¼	T
50	(D) (T)..H22TD		144	....	22000	.....	10.00/22	.....	Her DWXD	6–4¼x4¾	404	5.15	320	135–2600	.....	Y	Fu 5A430	5	Tim Q300P		H	6.53–8.53	Tim 35100TW	Ws4IA	.....	.....	a	TX	.....	8x3¼x¼	T
51	(D) (T).....25TD		148	....	25000	.....	11.00/20	11.00/22	Her DRXC	6–4½x5¼	529	14	400	148–2200	7–3¼x13¾	Y	Spi 6253	5	Tim Q300P		H	6.53–8.53	Tim 35000TW	Ws4IA	.....	.....	a	2	.....	8½x3¼x☆	T
52	(D) (T)..H25TD		148	....	25000	.....	10.00/22	.....	Her DRXC	6–4½x5¼	529	14	400	148–2200	7–3¼x13¾	Y	Spi 6253	5	Tim R300P		H	6.53–8.53	Tim 35000TW	Ws4IA	.....	.....	a	2	.....	8½x3¼x☆	T
53	(D) (T).....27TD		152	....	27000	.....	10.00/22	11.00/24	Cum HB600	6–4½x6	672	17	500	150–1800	7–4½x16½	Y	Fu 5A920	5	Tim R300P		H	4.92–6.42	Tim 26450W	Ws4IA	.....	.....	a	2	.....	8½x3¼x☆	T
54	(D) (T)..H27TD		152	....	27000	.....	10.00/22	.....	Cum HB600	6–4½x6	672	17	500	150–1800	7–4½x16½	Y	Fu 5A920	5	Tim S200P‡‡		H	**–6.42	Tim 26450W	Ws4IA	.....	.....	a	2	.....	8½x3¼x☆	T
55	(D) (T).....28TD		155	....	28000	.....	10.00/22	11.00/24	Cum NHB600	6–5¼x6	743	15	575	200–2100	7–4½x16½	Y	Fu 5A920	5	Tim S200P‡‡		H	6.42	Tim 26450W	Ws4IA	.....	.....	a	2D	.....	8½x3¼x☆	T
56	(T).....26TG		148	....	26000	.....	10.00/22	11.00/22	Con R660	6–4½x5⅛	602	5.9	484	199–2600	7–3¼x—	Y	Fu 5A65	5	Tim R100P‡‡		H	**–5.29	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8½x3¼x☆	T
57	Crosley.....B		80	....	2130	1330●●	4.50/12	.....	Own ▼	4–2½x2¼	44	7.8	33	26–5400	5–‡	..	WG-ASI-T92	3	Spl	2F	..	** –5.17	Own	G-H	♦♦♦	♦♦♦	C	2	.....	.....	C
58	Dodge.....B-2-B		108	108	4850	.....	6.00/16S	6.50/16S	Own T-172	6–3¼x4½	217	6.6	172	96–3600	4–2½x4.8	N	NP-88840	3	Own T172	H‡	H	4.1 –4.78	Own T172	O4IH	175	264	cE	TX	40	☆x2☆x6☆	C
59	.....B-2-C		116	116	5500	.....	7.00/16S	7.00/16S	Own T-174	6–3¼x4½	217	6.6	172	96–3600	4–2½x4.8	N	NP-88840	3	Own T174	H‡	H	4.1 –4.78	Own T174	O4IH	184	277	Co	TX	48	☆x2☆x6☆	C
60	.....B-2-D		116	126	8000	.....	6.00/16S●	6.00/20	Own T-176	6–3¼x4½	230	6.7	187	102–3600	4–2½x4.8	N	NP-88870	3	Own T176	HyF	H	3.9 –4.89	Own T176	O4IH	209	316	Co	TX	48	☆x2☆x6½☆	C
61	Rte.Van.B-1-DU		102	117	7900	.....	7.50/16S●	8.25/16S	Own T-164	6–3¼x4½	230	6.6	186	94–3200	4–2½x4.8	N	NP-88490	3	Own T164	HyF	H	3.9 –4.89	Own T164	O4IH	209	316	Co	TX	.....	☆x2☆x6☆	C
62	Rte.Van.B-1-EU		102	142	10100	.....	6.50/16S●	9.00/16S	Own T-165	6–3¼x4½	230	6.6	186	94–3200	4–2½x4.8	N	NP-88500	3	Own T165	HyF	H	4.89–5.8	Own T165	O4IH	234	355	Co	TX	.....	‡‡x2☆x6☆	C
63	.....B-2-FL		128	152	9500	.....	6.00/20‡	6.50/20	Own T-178	6–3☆x4¼	236	6.6	192	109–3600	4–2½x5.04	N	NP-39760	4	Own T178	HyF	H	5.6 –6.8	Own T178	O4IH	336	479	...	TX	60	.21x2¾x7	C
64	.....B-2-F		128	170	13500	.....	6.00/20‡	8.25/20♣	Own T-178	6–3☆x4¼	236	6.6	192	109–3600	4–2½x5.04	N	NP-39760	4	Own T178	HyF	H	5.6 –6.8	Own T178	O4IH	336	479	...	TX	60	.21x2¾x7	C
65	.....B-2-FA		128	170	13500	.....	6.50/20	8.25/20♣	Own T-178	6–3☆x4¼	236	6.6	192	109–3600	4–2½x5.04	Y	NP-39760	4	Eat A4-1350	SFd	H	5.83–8.11	Own T178	O4IH	336	479	...	TX	60	.21x3¾x7	C
66	.....B-2-G		128	192	14500	.....	6.50/20¶	8.25/20	Own TX-178	6–3☆x4¼	236	6.6	192	109–3600	4–2½x5.04	N	NP-88570	4	Own TX-178	HyF	H	5.6 –6.8	Own T-178	O4IH	336	479	Co	TX	60	.21x2‡‡x8‡‡	C
67	.....B-2-GA		128	192	14500	.....	6.50/20¶	8.25/20	Own TX-178	6–3☆x4¼	236	6.6	192	109–3600	4–2½x5.04	Y	NP-88570	4	Eat A5-1350	SFd	H	5.8 –8.8	Own TX-178	O4IH	336	479	Co	TX	60	.21x2‡‡x8‡‡	C
68	.....B-2-GM		107	161	14750	.....	6.50/20	8.25/20	Own TX-182	6–3☆x4¼	236	6.6	192	109–3600	4–2½x5.04	N	NP-88850	4	Own TX-182	HyF	H	5.6 –6.8	Own TX-182	O4IH	336	479	Co	TX	60	.21x2‡‡x8‡‡	C

¶—8.25/20 front tires are required when 9.00/20 dual rears are used.

**—Pick-up truck: panel delivery 1360.

‡‡—Two speed axles available.

♣—Includes cab.

¶—Front only: Rear 9.00/20

(Turn to Page 110, Please)

::—Own Loadmaster engine available on models TJ-TK-TL at extra cost.

■—5.43 axle available on Models TJ-TK-TL and 2-speed axle available on TVS-TWS-TP-TPS-TR-TRS-TS-TSS-TV-TW-TX.

‡—Front only: Rear 6.50/20S.

▲—7.50/20 can be used on the front with no decrease in G. V. W. when 8.25/20 are used on dual rear wheels.

♦♦♦—Two moulded buttons per wheel—1¼″ diameter, ⅜″ thick.

†—Forward control Chassis for Door-to-Door delivery bodies. These chassis do not have cowl.

††—Also available in 5.14 ratio.

‡‡—Front only: Rear 7.00/16S.

§—1 Front 1.375x1.312; 3 Center 1.375x.870; 1 Rear 1.500x1.499.

‖—4-speed transmission available.

■—Sleeper cab models available.

‡‡—Diameter: (Average) Front, 2.6858; Front Center, 2.7168; Rear Center, 2.7478; Rear, 2.7788; Total length, 5⅝.

▼—Includes spare tire, full fuel tank and cooling system.

♣—For only single rear: Dual rear are 7.50/20.

●●—Propeller shaft type available at extra cost.

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All its service-proved features continue to make Exide the outstanding battery for truck service.

1. Heavy, oversize plates
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(Continued from Page 108)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Speeds	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	Type
	Dodge—Cont'd.																														
1	B-2-GMA		107	161	14750		6.50/20	8.25/20	Own TX-182	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88850	4	Eat A5-1350	SFd	H	5.8 –8.8	Own TX-182	O4IH	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
2	B-2-H		128	192	16000		7.50/20	8.25/20	Own T-192	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88570	4	Own T-192	HyF	H	6.2 –6.8	Own TX-192	O4IHV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
3	B-2-HA		128	192	16000		7.50/20	8.25/20	Own T-192	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88570	4	Eat A5-1350	SFd	H	5.8 –8.8	Own T-192	O4IHV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
4	B-2-HM		107	161	16250		7.50/20	8.25/20	Own T-194	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88850	4	Own T-194	HyF	H	6.2 –6.8	Own T-194	O4IHV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
5	B-2-HMA		107	161	16250		7.50/20	8.25/20	Own T-194	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88850	4	Eat A5-1350	SFd	H	5.8 –8.8	Own T-194	O4IHV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
6	B-2-HH		128	192	16000		7.50/20	8.25/20	Own T-192	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88570	4	Own T-192	HyF	H	6.2 –6.8	Own T-192	O4IHV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
7	B-2-HHA		128	192	16000		7.50/20	8.25/20	Own T-192	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88570	4	Eat A5-1350	SFd	H	5.8 –8.8	Own T-192	O4IHV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
8	B-2-HHM		107	161	16250		7.50/20	8.25/20	Own T-194	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88850	4	Own T-194	HyF	H	6.2 –6.8	Own T-194	O4IHV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
9	B-2-HHMA		107	161	16250		7.50/20	8.25/20	Own T-194	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88850	4	Eat A5-1350	SFd	H	5.8 –8.8	Own T-194	O4IHV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
10	B-2-JL		128	212	17000		6.00/20	8.25/20	Own T-180	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Own T-180	HyF	H	6.2– 7.16	Own T-180	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
11	B-2-JAL		128	212	17000		6.00/20	8.25/20	Own T-180	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Eat A5-1350	SFd	H	5.8 –8.8	Own T-180	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
12	B-2-J		128	212	17000		6.50/20	8.25/20	Own T-180	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Own T-180	HyF	H	6.2– 7.16	Own T-180	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
13	B-2-JA		128	212	17000		6.50/20	8.25/20	Own T-180	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Eat A5-1350	SFd	H	5.8 –8.8	Own T-180	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
14	B-2-JML		107	161	17250		6.00/20	8.25/20	Own T-184	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Own T-184	HyF	H	6.2 –7.16	Own T-184	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
15	B-2-JMAL		107	161	17250		6.00/20	8.25/20	Own T-184	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Eat A5-1350	SFd	H	5.8 –8.8	Own T-184	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
16	B-2-JM		107	161	17250		6.50/20	8.25/20	Own T-184	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Own T-184	HyF	H	6.2 –7.16	Own T-184	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
17	B-2-JMA		107	161	17250		6.50/20	8.25/20	Own T-184	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Eat A5-1350	SFd	H	5.8 –8.8	Own T-184	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
18	B-2-KAL		128	212	17500		8.25/20▲	9.00/20	Own TX-180	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Eat 1650	SFd	H	6.14–9.04	Own T-180	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
19	B-2-KL		128	212	17500		8.25/20	9.00/20	Own TX-180	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Tim H-101	SFd	H	6.8 –7.2	Own T-180	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
20	B-2-K		128	212	17500		8.25/20	9.00/20	Own TX-180	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Tim H-101	SFd	H	6.8 –7.2	Own T-180	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
21	B-2-KA		128	212	17500		8.25/20	9.00/20	Own TX-180	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Eat 1650	SFd	H	6.14–9.04	Own TX-180	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
22	B-2-KMAL		107	161	17750		8.25/20	9.00/20	Own TX-184	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Eat 1650	SFd	H	6.14–9.04	Own TX-184	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
23	B-2-KML		107	161	17750		8.25/20	9.00/20	Own TX-184	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Tim H-101	SFd	H	6.8 –7.2	Own TX-184	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
24	B-2-KM		107	161	17750		8.25/20	9.00/20	Own TX-184	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Tim H-101	SFd	H	6.8 –7.2	Own TX-184	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
25	B-2-KMA		107	161	17750		8.25/20	9.00/20	Own TX-184	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Eat 1650	SFd	H	6.14–9.04	Own TX-184	O4IHV	396	553	c	TX	60	1/2 x2 1/2 x8 1/2	P
26	B-2-R		130	229	19000		7.50/20	9.00/20	Own TX-186	6–3 1/4 x4 1/2	306	6.4	245	122–3200	7–3x11.23	Y	NP-88220	5	Tim H-100	HyF	H	** –6.8	Own TX-186	O4IHV	397	609	c	TX	60	1/2 x2 1/2 x9 1/2	P
27	B-2-RA		130	229	19000		7.50/20	9.00/20	Own TX-186	6–3 1/4 x4 1/2	306	6.4	245	122–3200	7–3x11.23	Y	NP-88220	5	Tim H-300	SFd	H	6.14–8.15	Own T-186	O4IHV	397	609	c	TX	60	1/2 x2 1/2 x9 1/2	P
28	B-2-T		130	190	21000		7.50/20△	10.00/20	Own TX-188	6–3 1/4 x5	331	6.4	270	128–3000	7–3x11.23	Y	NP-88450	5	Tim L-100	HyF	H	6.8 –8.2	Own 32516A1	O4IHV	425	666	c	TX	60	1/4 x3x10	P
29	B-2-TA		130	190	21000		7.50/20△	10.00/20	Own TX-188	6–3 1/4 x5	331	6.4	270	128–3000	7–3x11.23	Y	NP-88450	5	Tim L-300	SFd	H	6.3 –9.18	Tim 32516A1	O4IHV	425	666	c	TX	60	1/4 x3x10	P
30	B-2-V		130	190	23000		9.00/20†	11.00/20	Own TX-188	6–3 1/4 x5	331	6.4	270	128–3000	7–3x11.23	Y	NP-88450	5	Tim Q-100	HyF	H	6.8 –7.8	Tim 35020nx9	O4IHV	486	770	c	TX	60	1/4 x3x10	P
31	B-2-VA		130	190	23000		9.00/20†	11.00/20	Own TX-188	6–3 1/4 x5	331	6.4	270	128–3000	7–3x11.23	Y	NP-88450	5	Tim Q-190	SFd	H	6.5 –9.5	Tim 35020nx9	O4IHV	486	770	c	TX	60	1/4 x3x10	P
32	YL-YAL-Y-YA School Buses		130	190	28000		9.00/20†	11.00/20	Own T-190	6–4x5	377	6.5	330	154–3000	7–3x11.2	Y	Cla-290-V2	5	Tim Q-100	HyF	H	††	Tim 32516	O4IHV	486	770	c	TX	60	1/4 x3 1/4 x x101	P
33	B-2-FS		152	170	13500		6.50/20	7.50/20	Own TS-178	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	N	NP-39760	4	Own TS-178	HyF	H	5.6 –6.8	Own TX-178	O4IHV	336	479	Co	TX		1/2 x2 1/2 x7 1/2	C
34	B2-GS		192	192	15000		7.50/20	7.50/20-10	Own TX8-178	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	N	NP-88570	4	Own TX-178	HyF	H	5.6 –6.8	Own TX8-178	O4IHV	336	479	Co	TX		1/2 x2 1/2 x8 1/2	C
35	B2-HHS		192	192	15500		7.50/20	8.25/20	Own TS-192	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	N	NP-88570	4	Own TS-192	HyF	H	6.2 –6.8	Own TS-192	O4IHV	336	479	Co	TX		.21x2 1/2 x8 1/2	C
36	B-2-JS		212	212	17000		7.50/20	8.25/20	Own TS-180	6–3 1/2 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Own TS-190	HyF	H	6.2 –7.16	Own TS-180	O4IHV	396	553	c	TX		1/2 x2 1/2 x8 1/2	P
37	B-2-RS		229	229	19000		8.25/20	9.00/20	Own TS-186	6–3 1/4 x4 1/2	306	6.4	245	122–3200	7–3x11.2	Y	NP-88220	5	Tim H100	HyF	H	6.8	Own T-186	O4IHV	397	609	c	TX		1/2 x2 1/2 x9 1/2	P
38	Duplex.....T		136	220	18000	6600	8.25/20D	9.00/20	Her JXD	6–4x4 1/2	320	6.2	240	113–3000	7–2 1/2 x10 1/2	N	WGT9A	4	Own TS-178	HyF	H	5.6 –6.8	Own TX-178	O4IHV	336	479	Co	TX	57 1/2	9 1/2 x3 1/2 x x	C
39	TH-404		136	220	18000	6900	8.25/20D	9.00/20	Her WXLC3	6–4 1/2 x4 1/2	404	5.8	312	139–2600	7–2 1/2 x13 1/2	Y	Fu-5A430	5	Tim H-300	DF	H	6.13–8.15	Tim 32502	L4IHV	420	654	A	TX	49 1/2	9 1/2 x3 1/2 x x	C
40	R		136	220	25000	8820	9.00/20D	10.00/20	Her WXLC-3	6–4 1/2 x4 1/2	404	5.8	312	139–2600	7–2 1/2 x13 1/4	Y	Fu 5A43	5	Tim Q300	DF	R	6.53–8.53	Tim 35100	L4IHV	730	1016	A	TX	49 1/4	9 1/2 x3 1/2 x x	C
41	SH-501		172	208	27000	9500	10.00/20	11.00/20	Her RXB	6–4 1/2 x5	360	5.4	360	137–2400	7–3x13 1/4	Y	Fu 5A620	5	Tim Q200	2F	R	** –7.77	Tim 35100	BW41A	730	1016	A	TX	61 1/4	9 1/2 x3 1/2 x x	C
42	JHA		148	220	28000	9800	10.00/20D	11.00/20	Her RXB	6–4 1/2 x5	360	5.4	360	137–2400	7–3x13 1/4	Y	Fu 5A620	5	Tim 8200	2F	R	** –9.83	Tim 26450	BW41A	912	1311	A	TX	61 1/4	10 1/2 x3 1/2 x x	C
43	JH-558		148	220	28000	9800	10.00/20D	11.00/20	Her RXLD	6–4 1/4 x5 1/4	558	6.3	430	154–2400	7–3 1/2 x13 1/4	Y	Fu-5C650	5	Tim S-300	DF	R	6.53–8.53	Tim 26450	BW41A	912	1311	A	TX	60 3/4	10 1/2 x3 1/2 x x	C
44	KHA		148	220	32000	10500	11.00/20D	11.00/20	Her RXC	6–4 1/2 x5 1/4	529	5.4	395	132–2300	7–3x13 1/4	Y	Fu 5A620	5	Tim U-200	2F	R	** –9.83	Tim 26450	BW41A	912	1311	A	TX	60 3/4	10 1/2 x3 1/2 x x	C
45	L		148	220	37000	11300	11.00/20D	11.00/20	Her RXLD	6–4 1/4 x5 1/4	558	5.4	430	154–2400	7–3 1/2 x13 1/4	Y	Fu 5C650	5	Tim U-200	2F	R	** –9.83	Tim 26450	BW41A	912	1311	A	TX	60 3/4	10 1/2 x3 1/2 x x	C
46	Federal.....15M		135	194	14500	4080	6.50/20D	7.50/20	Herc JXEF	6–3 1/2 x4 1/2	245	...	184	93–3400	7–2 1/2 x10 1/2	N	WGT9A	4	T53547DPH	BF	H	5.66	Tim 30000HX	L4IHV	310	482	a	TX	56	8 1/2 x2 1/2 x1/4	T
47	16M		139	250	15500	4460	7.50/20D	7.50/20	Her JXEF	6–3 1/2 x4 1/2	245	...	184	93–3400	7–2 1/2 x10 1/2	N	WG T9A	4	T 53547DPH	BF	H	** –5.66	Tim 30000HX	L4IHV	310	482	a	TX	60	8 1/2 x2 1/2 x1/4	T
48	16M2		139	250	15500	4590	7.50/20D	8.25/20D	Her JXEF	6–3 1/2 x4 1/2	245	...	184	93–3400	7–2 1/2 x10 1/2	N	WG T9A	4	Tim E300DPH	DF	H	6.13–8.10	Tim 30000HX	L4IHV	310	482	a	TX	60	8 1/2 x2 1/2 x1/4	T
49	15M		139	250	17000	4700	8.25/20D	8.25/20	Her JXBF	6–3 3/4 x4 1/4	263	...	192	98–3200	7–2 1/2 x10 1/2	N	WG T9A	4	Tim E100DPH	SF	H	** –6.20	Tim 30003H	LT4IHV	314	532	a	TX	60	8 1/2 x2 1/2 x1/4	T
50	15M2		139	250	17000	4830	8.25/20D	8.25/20	Her JXBF	6–3 3/4 x4 1/4	263	...	192	98–3200	7–2 1/2 x10 1/2	N	WG T9A	4	Tim E300DPH	dF	H	6.13–8.10	Tim 30003H	LT4IHV	314	532	a	TX	60	8 1/2 x2 1/2 x1/4	T
51	25M		139	250	19000	4950	8.25/20D	9.00/20	Her JXCF	6–3 3/4 x4 1/4	282	...	212	103–3200	7–2 1/2 x10 1/2	N	Cla 205VO	5	TimH100DPH	SF	H	** –6.80	Tim 3100H	LT4IHV	346	583	a	TX	60	8 1/2 x2 1/2 x1/4	T
52	25M2		139	250	19000	5100	8.25/20D	9.00/20	Her JXCF	6–3 3/4 x4 1/4	282	...	212	103–3200	7–2 1/2 x10 1/2	N	Cla 205VO	5	TimH300DPH	dF	H	6.13–8.15	Tim 3100H	LT4IHV	346	583	a	TX	60	8 1/2 x2 1/2 x1/4	T
53	29M		139	250	21500	5500	9.00/20D	10.00/20	Her JXDF	6–4x4 1/4	320	...	250	115–3100	7–2 1/2 x10 1/2	Y	Cla 205V	10	TimL100DPH	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TX	60	8 1/2 x2 1/2 x1/4	T
54	29M2		139	250	21500	5690	9.00/20D	10.00/20	Her JXDF	6–4x4 1/4	320	...	250	115–3100	7–2 1/2 x10 1/2	Y	Cla 205V	10	TimL300DPH	dF	H	6.32–8.22	Tim 32514H	LT4IHV	466	820	a	TX	60	8 1/2 x2 1/2 x1/4	T
55	29MA		155	250	21500	5950	9.00/20D	10.00/20	Her JXDF	6–4x4 1/4	320	...	250	115–3100	7–2 1/2 x10 1/2	Y	Cla 205V‡	15	TimL100DPH	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TD	76	8 1/2 x2 1/2 x1/4	T
56	29ML		139	250	21500	5535	9.00/20D	10.00/20	Herc JXLDF	6–4x4 1/2	339	...	272	131–3200	7–2 1/2 x10 1/2	Y	Cla 205V	5	TimL100DPH	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TX	60	8 1/2 x2 1/2 x1/4	T
57	29ML2		139	250	21500	5725	9.00/20D	10.00/20	Herc JXLDF	6–4x4 1/2	339	...	272	131–3200	7–2 1/2 x10 1/2	Y	Cla 205V	10	TimL300DPH	dF	H	6.32–8.22	Tim 32514H	LT4IHV	466	820	a	TX	60	8 1/2 x2 1/2 x1/4	T
58	29MLA		155	250	21500	5985	9.00/20D	10.00/20	Herc JXLDF	6–4x4 1/2	339	...	272	131–3200	7–2 1/2 x10 1/2	Y	Cla 205V	15	TimL100DPH	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TD	76	8 1/2 x2 1/2 x1/4	T
59	35M		143	203	22500	6925	9.00/20D	10.00/20	Con T6371F	6–4 1/2 x4 1/2	371	...	290	140–3000	7–2 1/2 x13 1/2	Y	Cla 290VO	5	TimL100DPH	SF	R	**–6.83	Tim 32514H	LT4IHV	466	820	a	TX	60 1/2	10 1/2 x3 1/2 x x	P
60	35M2		143	203	22500	7115	9.00/20D	10.00/20	Con T6371F	6–4 1/2 x4 1/2	371	...	290	140–3000	7–2 1/2 x13 1/2	Y	Cla 290VO	10	TimL300DPH	dF	R	6.32–8.22	Tim 32514H	LT4IHV	466	820	a	TX	60 1/2	10 1/2 x3 1/2 x x	P
61	45M		143	203	26000	8005	10.00/20D	10.00/24	Con T6427F	6–4 1/8 x4 1/4	427	...	347	158–2800	7–2 1/4 x13 1/2	Y	Cla 290VO	5	Tim Q100P	SF	R	** –6.83	Tim 35011TW	TW41A	606	933	a	TD	60 1/2	10 1/2 x3 1/2 x x	P
62	45M2		143	203	26000	8380	10.00/20D	10.00/24	Con T6427F	6–4 1/8 x4 1/4	427	...	347	158–2800	7–2 1/4 x13 1/2	Y	Cla 290VO	10	Tim Q300P	dF	R	6.53–8.53	Tim 35011TW	TW41A	606	933	a	TD	60 1/2	10 1/2 x3 1/2 x x	P
63	55M2		143	203	30000	8635	11.00/22D	11.00/24	Con T6427F	6–4 1/8 x4 1/4	427	...	347	158–2800	7–2 1/4 x13 1/2	Y	Cla 290VO	10	Tim 8300P	HyF	R	6.53–8.53	Tim 36021TW	Tw41A	722	1051	a	TD	60 1/2	10 1/2 x3 1/2 x x	P
64	55MA		155	203	30000	8765	11.00/22D	11.00/24	Con T6427F	6–4 1/8 x4 1/4	427	...	347	158–2800	7–2 1/4 x13 1/2	Y	Cla 290V‡	15	Tim 8-200P	2F	R	** –7.08	Tim 36021TW	TW41A	722	1051	a	TD	72 1/2	10 1/2 x3 1/2 x x	P
65	60M		155	203	32000	9600	11.00/22D	11.00/24	Con 22RF	6–4 1/2 x5 1/2	501	...	385	148–2400	7–2 1/4 x14 1/2	Y	Fu 5A65‡	5	Tim 8200P	2F	R	** –7.08	Tim 36021TW	Tw41A	722	1051	a	FX	72 1/2	10 1/2 x3 1/2 x x	P
66	60M2		143	203	32000	9370	11.00/22D	11.00/24	Con 22RF	6–4 1/2 x5 1/2	501	...	385	148–2400	7–2 1/4 x14 1/2	Y	Fu 5A650	10	Tim 8300P	HyF	R	6.53–8.53	Tim 36021TW	Tw41A	722	1051	a	TX	60 1/2	10 1/2 x3 1/2 x x	P
67	65M2		141	201	33000	9995	11.00/22D	11.00/24	Con R6602F	6–4 1/4 x5 1/2	602	...	466	200–2600	7–3 1/4 x14 1/2	Y	Fu 5A650	10	Tim 8300P	HyF	R	6.53–8.53	Tim 36000TW	Tw41A	722	1051	a	TX	60 1/2	10 1/2 x3 1/2 x x	T
68	65MA		153	201	33000	10225	11.00/22D	11.00/24	Con R6602F	6–4 1/4 x5 1/2	602	...	466	205–3000	7–3 1/4 x14 1/2	Y	Fu 5A65‡	15	Tim 8200P	HyF	R	** –7.08	Tim 36000TW	Tw41A	722	1051	a	TX	72 1/2	10 1/2 x3 1/2 x x	T
	Ford F-1																														
69	Cowl....9HC-84	930	114	114	4700	2226	6.00/16-4	6.50/16-68	Own 7HC	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x5.0	N	Own 21C	3	Own 8C	H½	H	3.73–4.27	Own 8RC	O4IH	178	259	Co	M2	40.06	5.92x2 1/2 x18	T
70	Cowl....9RC-84	960	114	114	4700	2266	6.00/16-4	6.50/16-68	Own 8RC	8–3 1/8 x3 1/4	239	6.8	180	100–3800	3–2.49x5.2	N	Own 21C	3	Own 8C	H½	H	3.73–4.27	Own 8RC	O4IH	178	259	Co	M2	40.06	5.92x2 1/2 x18	T
	F-2																														
71	Cowl... 9HD-84	1045	122	122	5700	2616	6.50/16-6	7.50/16-68	Own 7HD	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x5.0	N	Own 51Y	4	Own 8D	8F	H	** –4.86	Own 8RD	O4IH	167	264	Co	M2	48.06	6x2 1/4 x 19	T
72	Cowl....9RD-84	1075	122	122	5700	2656	6.50/16-6	7.50/16-68	Own 8RD	8–3 1/8 x3 1/4	239	6.8	180	100–3800	3–2.49x5.2	N	Own 51Y	4	Own 8D	8F	H	** –4.86	Own 8RD	O4IH	167	264	Co	M2	48.06	6x2 1/4 x 19	T

†—Front only; Rear 10.00/20.
▲—Front only; Rear 8.25/20.

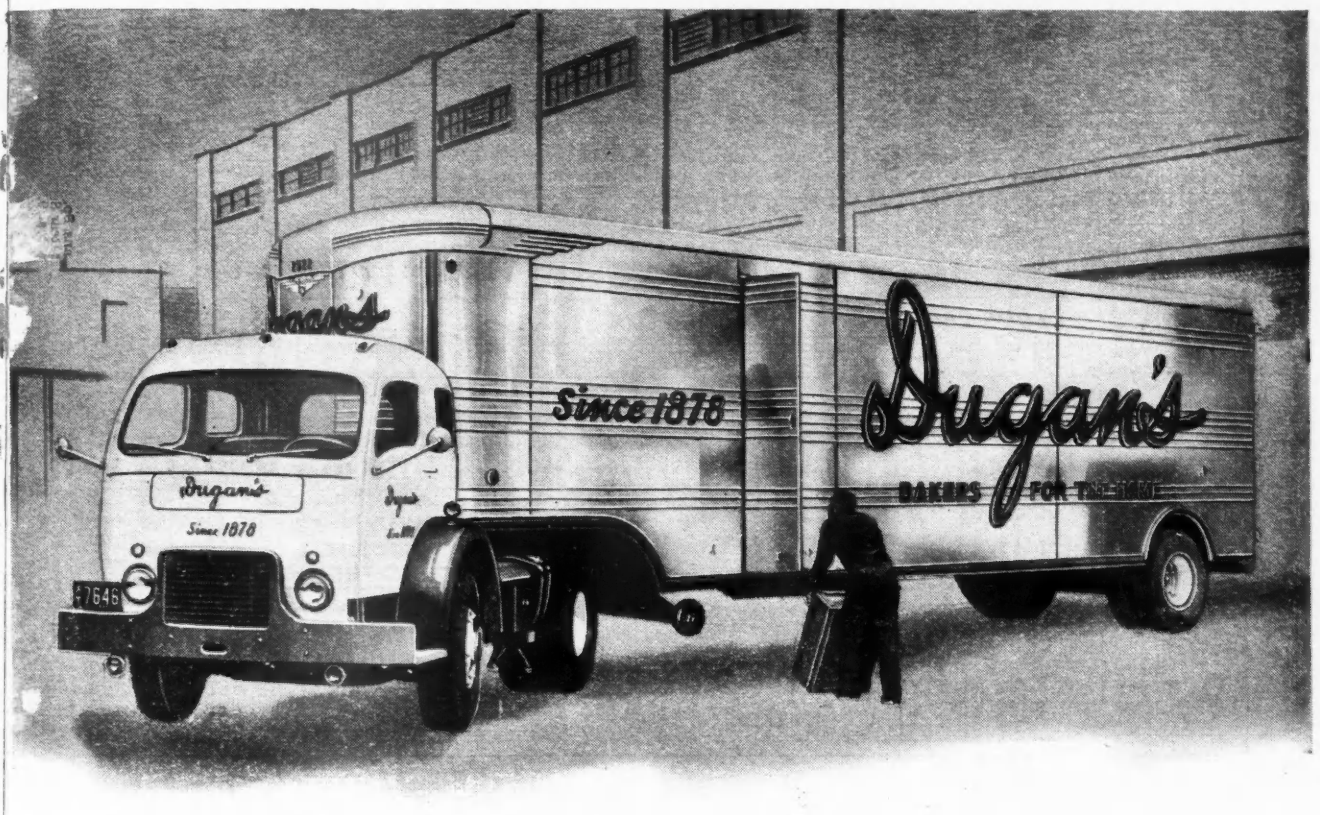
††—6.8–9.23 for Models YL and Y. 6.53–8.53 standard on YAL and YA, but 7.27/9.49 ratios are also available on these two models.

•—For shorter wheelbases—10x3 1/2 x 1/4.
♦—Auxiliary trans. Spicer 6231B, three forward speeds.

‡—Auxiliary tr
††—Front only
▲—Front only

ıcer 703F, three forward speeds.
25/16.
00/20-10.

(Turn to Page 112, Please)



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THE EXCLUSIVE new design of the White 3000 permits better maneuverability and roadability . . . new driving ease . . . time and driver energy savings. It permits greater body capacity in the same over-all truck length . . . saves time in traffic and in every phase of delivery service . . . more deliveries at lower cost per unit delivered. Its power-lift cab is saving hundreds of dollars in maintenance costs.

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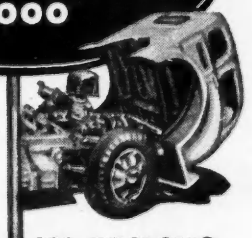
White
SUPER POWER 3000



THE WHITE MOTOR COMPANY
Cleveland 1, Ohio, U. S. A.
THE WHITE MOTOR COMPANY OF CANADA LIMITED
Factory at Montreal

FOR MORE THAN 50 YEARS THE GREATEST NAME IN TRUCKS

(Continued from Page 110)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Dual unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Speeds	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	Type
	Ford, Continued																														
	F-3																														
1	Cowl...9HY-84	1120	122	122	6800	2849	7.00/17-6S	7.50/17-8S	Own 7HY	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 51Y	4	Own 8Y	SF	H	** -4.86	Own 8RD	O4IH	188	308	Co	M2	48.06	6x2¼x.19	T
2	Cowl...9RY-84	1150	122	122	6800	2889	7.00/17-6S	7.50/17-8S	Own 8RY	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	N	Own 51Y	4	Own 8Y	SF	H	** -4.86	Own 8RD	O4IH	188	308	Co	M2	48.06	6x2¼x.19	T
	F-3 Parcel Divy.																														
3	w/s.....9HJ	1375	104	104	7800	3030	7.00/16-6	7.50/17-8S	Own 8HJ	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 8J	3	Own 8J	SF	H	** -4.86	Own 8J	O4IH	215	330	C	TX	82†	6x2¼x.19	T
4	w/s.....9H2J	1390	122	122	7800	3100	7.00/16-6	7.50/17-8S	Own 8HJ	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.2	N	Own 8J	3	Own 8J	SF	H	** -4.86	Own 8J	O4IH	215	330	C	TX	100†	6x2¼x.19	T
	F-4																														
5	Cowl...9HTL-84	1175	134	134	10000	3457	7.00/20-8S	7.00/18-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	SF	H	5.14-5.83	Own 7RTL	O4IH	302	506	Co	TX	60.06	7x2¼x.21	T
6	Cowl...9RTL-84	1205	134	134	10000	3497	7.00/20-8S	7.00/18-8	Own 8RT	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	Y	Own 41T	4	Own 8T	SF	H	5.14-5.83	Own 7RTL	O4IH	302	506	Co	TX	60.06	7x2¼x.21	T
	F-5																														
7	Cowl....9HT-84	1220	134	134	14000	3646	6.50/20-6	7.50/20-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	SF	H	5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	60.06	7x2¼x.21	T
8	Cowl....9RT-84	1250	134	134	14000	3686	6.50/20-6	7.50/20-8	Own 8RT	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	SF	H	5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	60.06	7x2¼x.21	T
9	Cowl...9H8T-84	1250	158	158	14000	3796	6.50/20-6	7.50/20-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	SF	H	5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	84.06	7x2¼x.21●	TL
10	Cowl...9R8T-84	1280	158	158	14000	3836	6.50/20-6	7.50/20-8	Own 8RT	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	SF	H	5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	84.06	7-2¼x.21●	LT
11	Cowl...9H6T-84	1370	176	176	14000	3926	6.50/20-6	7.50/20-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	SF	H	5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	102.2	7.08x2.79x½	TL●
12	Cowl...9R6T-84	1401	176	176	14000	3966	6.50/20-6	7.50/20-8	Own 8RT	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	SF	H	5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	102.2	7.08x2.79x½	TL●
	F-5 C.O.E.																														
13	Cab...9HOW-81	1605	110	110	14000	4346	6.50/20-6	7.50/20-8	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	SF	H	5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	60.06	7x2¼x.21●	TL
14	Cab...9ROW-81	1635	110	110	14000	4386	6.50/20-6	7.50/20-8	Own 8RW	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	SF	H	5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	60.06	7x2¼x.21●	TL
15	Cab....9HW-81	1635	134	134	14000	4476	6.50/20-6	7.50/20-8	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	SF	H	5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	84.06	7.08x2.8x¼●	TL
16	Cab....9RW-81	1665	134	134	14000	4516	6.50/20-6	7.50/20-8	Own 8RW	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	SF	H	5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	84.06	7.08x2.8x¼●	TL
17	Cab...9H8W-81	1665	158	158	14000	4546	6.50/20-6	7.50/20-8	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	SF	H	5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	108.1	7.08x2.8x¼●	TL
18	Cab...9R8W-81	1695	158	158	14000	4586	6.50/20-6	7.50/20-8	Own 8RW	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	SF	H	5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	108.1	7.08x2.8x¼●	TL
	F-5 School Bus																														
19	Bus Cl..9H8T-84	1315	158	158	12000	3755	6.50/20-6	7.00/20-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	SF	H	5.14-6.67	Own 7RTH	O4IH	302	506	Co	TX	128†	7x2¼x.21●	TL
20	Bus Cl..9R8T-84	1345	158	158	12000	3795	6.50/20-6	7.00/20-8	Own 8RT	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	SF	H	5.14-6.67	Own 7RTH	O4IH	302	506	Co	TX	128†	7x2¼x.21●	TL
21	Bus Cl..9H4T-84	1530	194	194	15000	4260	7.50/20-8	8.25/20-10	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	SF	H	5.14-6.67	Own 7RTH	O4IH	302	506	Co	TX	164†	7.08x2.8x¼●	TL
22	Bus Cl..9R4T-84	1560	194	194	15000	4300	7.50/20-8	8.25/20-10	Own 8RT	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	SF	H	5.14-5.67	Own 7RTH	O4IH	302	506	Co	TX	164†	7.08x2.8x¼●	TL
	F-6																														
23	Cowl..9HTH-84	1610	134	134	16000	3976	7.50/20-8	8.25/20-10	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	60.06	7.08x2.8x¼●	TL
24	Cowl..9RTH-84	1640	134	134	16000	4019	7.50/20-8	8.25/20-10	Own 8RT	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	60.06	7.08x2.8x¼●	TL
25	Cowl..9MTH-84	1665	134	134	16000	4024	7.50/20-8	8.25/20-10	Own 8MTH	6-3.5x4.4	254	6.8	212	110-3400	4-2.87x5.0	Y	Own 8MTH	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	60.06	7.08x2.8x¼●	TL
26	Cowl.9H8TH-84	1640	158	158	16000	4049	7.50/20-8	8.25/20-10	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	84.06	7.08x2.8x¼●	TL
27	Cowl.9M8TH-84	1707	158	158	16000	4074	7.50/20-8	8.25/20-10	Own 8MTH	6-3.5x4.4	254	6.8	212	110-3400	4-2.87x5.0	Y	Own 8MTH	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	84.06	7.08x2.8x¼●	TL
28	Cowl..9R8TH-84	1670	158	158	16000	4089	7.50/20-8	8.25/20-10	Own 8RT	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	84.06	7.08x2.8x¼●	TL
29	Cowl.9M6TH-84	1748	176	176	16000	4154	7.50/20-8	8.25/20-10	Own 8MTH	6-3.5x4.4	254	6.8	212	110-3400	4-2.87x5.0	Y	Own 8MTH	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	102.3	7.08x2.8x¼●	TL
30	Cowl.9H6TH-84	1623	176	176	16000	4129	7.50/20-8	8.25/20-10	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	102.3	7.08x2.8x¼●	TL
31	Cowl.9R6TH-84	1655	176	176	16000	4169	7.50/20-8	8.25/20-10	Own 8RT	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	102.3	7.08x2.8x¼●	TL
	F-6 C.O.E.																														
32	Cab.9HOWH-81	1990	110	110	16000	4549	7.50/20-8	8.25/20-10	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	60.06	7x2¼x.21●	TL
33	Cab.9ROWH-81	2020	110	110	16000	4589	7.50/20-8	8.25/20-10	Own 8RW	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	60.06	7x2¼x.21●	TL
34	Cab.9MOWH-81	2059	110	110	16000	4574	7.50/20-8	8.25/20-10	Own 8MWH	6-3.5x4.4	254	6.8	210	106-3400	4-2.87x5.0	Y	Own 8MTH	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RW	O4IHV	302	506	...	TX	60.06	7x2¼x.21●	TL
35	Cab...9HWH-81	2020	134	134	16000	4679	7.50/20-8	8.25/20-10	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	84.06	7.08x2.8x¼●	TL
36	Cab...9RWH-81	2050	134	134	16000	4719	7.50/20-8	8.25/20-10	Own 8RW	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	84.06	7.08x2.8x¼●	TL
37	Cab..9MWH-81	2091	134	134	16000	4704	7.50/20-8	8.25/20-10	Own 8MWH	6-3.5x4.4	254	6.8	210	106-3400	4-2.87x5.0	Y	Own 8MTH	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RW	O4IHV	302	506	...	TX	84.06	7.08x2.8x¼●	TL
38	Cab..9H8WH-81	2050	158	158	16000	4749	7.50/20-8	8.25/20-10	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	108.1	7.08x2.8x¼●	TL
39	Cab..9R8WH-81	2080	158	158	16000	4789	7.50/20-8	8.25/20-10	Own 8RW	8-3⅛x3¼	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	108.1	7.08x2.8x¼●	TL
40	Cab.9M8WH-81	2122	158	158	16000	4774	7.50/20-8	8.25/20-10	Own 8MWH	6-3.5x4.4	254	6.8	210	106-3400	4-2.87x5.0	Y	Own 8MTH	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	108.1	7.08x2.8x¼●	TL
	F-7																														
41	Cowl....9EQ-84	2685	135	135	19000	5478	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQ	5	Own 8Q	Hy	H	** -6.8	Own 7EQ	O4IHV	444	697	Co	TX	61.06	9x3x.25†	T
42	Cowl....9E7Q-84	2861	147	147	19000	5528	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQ	5	Own 8Q	Hy	H	** -6.8	Own 7EQ	O4IHV	444	697	Co	TX	73.06	9x3x.25†	T
43	Cowl....9E9Q-84	2735	159	159	19000	5648	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQ	5	Own 8Q	Hy	H	** -6.8	Own 7EQ	O4IHV	444	697	Co	TX	85.06	9x3x.25†	T
44	Cowl....9E8Q-84	2913	178	178	19000	5748	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQ	5	Own 8Q	Hy	H	** -6.8	Own 7EQ	O4IHV	444	697	Co	TX	104.1	9x3x.25†	T
45	Cowl....9E5Q-84	2785	195	195	19000	5808	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQ	5	Own 8Q	Hy	H	** -6.8	Own 7EQ	O4IHV	444	697	Co	TX	121.1	9x3x.25†	T
	F-8																														
46	Cowl..9EQH-84	3155	135	135	22000	5934	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQH	5	Own 8QH	SF	H	** -7.17	Own 7EQ	O4IHV	485	729	C	TX	61.06	9x3x.25†	T
47	Cowl..9E7QH-84	3352	147	147	22000	5984	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQH	5	Own 8QH	SF	H	** -7.17	Own 7EQ	O4IHV■	485	729	C	TX	73.06	9x3x.25†	T
48	Cowl..9E9QH-84	3205	159	159	22000	6224	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQH	5	Own 8QH	SF	H	** -7.17	Own 7EQ	O4IHV■	485	729	C	TX	85.06	9x3x.25†	T
49	Cowl..9E8QH-84	3404	178	178	22000	6124	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQH	5	Own 8QH	SF	H	** -7.17	Own 7EQ	O4IHV■	485	729	C	TX	104.1	9x3x.25†	T
50	Cowl..9E5QH-84	3255	195	195	22000	6284	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQH	5	Own 8QH	SF	H	** -7.17	Own 7EQ	O4IHV■	485	729	C	TX	121.1	9x3x.25†	T
51	Kenworth(D)..521	.....	161	215	35000	12200	10.00/20	11.00/22	Cum HB6	6-4½x6	672	17.	500	150-1800	7-4½x16½	Y	BL 8241	4	Tim U200P	DR	H	6.42-7.84	Tim 36000TW	Ws4IA	752	1050	a	TD	72	9½x3¼x⅞	C
52	585	.....	150	215	30000	10130	10.00/20	11.00/22	Bu LO525	6-4½x5½	525	5.5	385	150-2200	7-3x11½	Y	Fu 5A620	5	Tim U200P	.....	...	6.14	Tim 36000TW	Ws4IA	752	....	a	....	70	9½x3¼x⅞	....
53	Linn.....A-15	.....	120	....	9000	6000	7.50/20S	8.25/20S	Her JXE3	6-3½x4¼	245	6.5	184	91-3200	7-2½x10⅜	Y	WGT9	4	Own 601	N	N	None	Tim F30B28H	L4IH	306	478	a	T	.....	None	....
54	.....A-25	.....	156	....	11200	6200	7.50/20S	8.25/20	Her JXE3	6-3½x4¼	245	6.5	184	91-3200	7-2½x10⅜	Y	WGT9	4	Own 601	N	N	None	Tim F30B28H	L4IH	306	478	a	X	.....	None	....
55	.....A-35	.....	169	....	14700	7900	7.50/20D	8.25/20	Her JXC	6-3¾x4¼	282	6.7	207	103-3200	7-2½x10⅜	Y	WGT9	4	Own 602T	N	N	None	Tim F30B28H	L6IH	486	744	a	X	.....	None	....
56	.....A-45	.....	205	....	16900	8100	7.50/20D	8.25/20	Her JXC	6-3¾x4¼	282	6.7	207	103-3200	7-2½x10⅜	Y	WGT9	4	Own 602T	N	N	None	Tim F30B28H	L6IH	486	744	a	X	.....	None	....
57	Mar. Her...DVL-4	.....	90	118	‡6750	.....	7.50/16S	8.25/18S	Willys MB	4-3½x4⅛	134	6.4	105	60-4000	3-2.33x5.48	Y	Own	3	(Front Drive)	.....	.....	7.10	Own	4IH	202	327	M2	.....	.....	None	....
58	Peterbilt(D)...280	.....	175	Opt	35000	12500	10.00/20D	11.00/22	Cum HB600	6-4½x6	672	17.	500	150-1800	7-4½x16½	Y	Spi 8041	12	U-200P	2F	R	** -6.42	TimFe900DPA	Ws4IA	738	1052	...	TD	86½	10½x3½x⅞	CT
59	Reo.....E-19X	.....	125	125	8000	4400▲	7.00/20S	8.25/20S	Own 245	6-3½x4¼	245	6.2	192	89-3100	7-2½x10.7	Y	WG T97	4	Tim 53547	SF	H	4.57-6.16	Tim 30000	LT4IH	310	482	var	TX	60⅝	8¼x2½x⅜	T
60	.....E-19A	.....	125	125	16000	4950▲	7.50/20	8.25/20	Own 245	6-3½x4¼	245	6.2	192	89-3100	7-2½x10.7	Y	WG T97	4	Tim E100♦	HF	H	5.28-6.8	Tim 30000	LT4IVH	310	482	var	TX	60⅝	8¼x2½x⅜	T
61	.....E-19T	.....	125	125	16000	5410▲	8.25/20	8.25/20	Own 245	6-3½x4¼	245	6.2	192	89-3100	7-2½x10.7	Y	WG T97	4	Tim E300	HFd	H	6.13-8.10	Tim 30000	LT4IVH	310	482	var	TX	60⅝	8¼x2½x⅜	T

(Turn to Page 114, Please)

▲—Includes cab. †—Cowl to axle. ♦—Two speed axle available.
■—Air brake equipment optional on F-8, Front 16x2¼, Rear 16½x5½.

▼—Lockheed type front and Timken dual primary rear brakes.
●—Reinforcement 6.58x2.21x.125 extended to include front spring rear brackets and rear spring front bracket.
†—Reinforcement 8.5x2.56x.15 starts at front spring rear brackets and ends behind rear spring front brackets

USER REPORT:

"...users of Warner Electric Brakes since 1933...won National Safety Contest for past two years..."

HELDT BROS., *Trucks*

TRUCKS • TRACTORS • BULLDOZERS • MOTOR GRADERS • SULLIVAN CITY • WINCH AND CRANE EQUIPPED • CHARLOTTE

POST OFFICE BOX 1208
ALICE, TEXAS

ALICE • FREER

December 27, 1948

Warner Electric Brake Mfg. Co.
Beloit, Wisconsin

Gentlemen:

We have been users of Warner Electric Brakes since 1933. Our fleet consists of 60 self loading floats and pipe trailers, of which 40 are equipped with Warner Electric Brakes which our equipment operates and the type of treatment Warner Electric Brakes are subjected to.

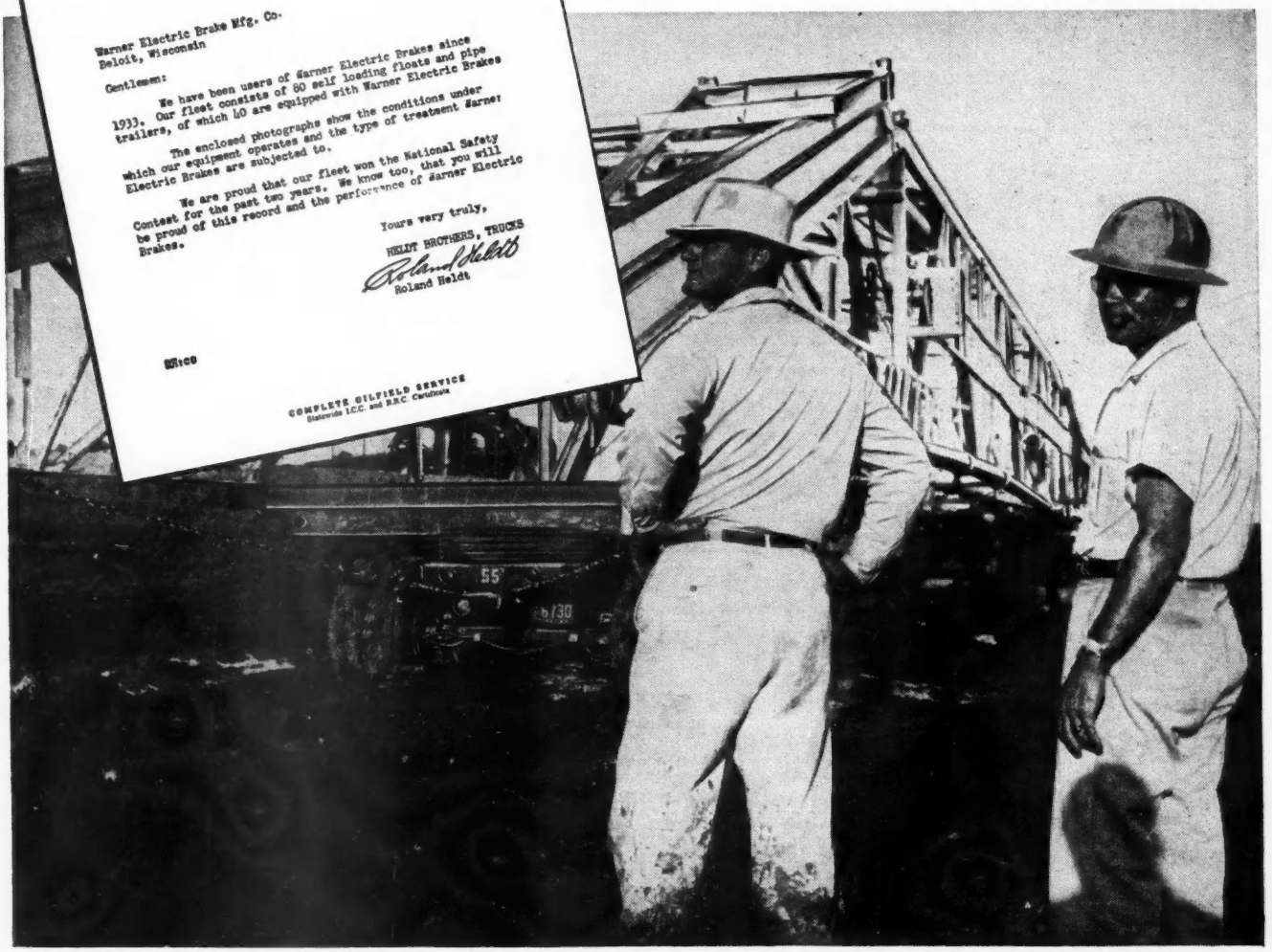
The enclosed photographs show the conditions under

We are proud that our fleet won the National Safety Contest for the past two years. We know too, that you will be proud of this record and the performance of Warner Electric Brakes.

Yours very truly,
HELDT BROTHERS, TRUCKS
Roland Heldt

Alice

COMPLETE OILFIELD SERVICE
Statewide I.C.C. and R.R.C. Certificate



LOOK at that muck and mire! That's the stuff that's sheer murder on men and machines — the stuff you've got to expect when you go after oil — because oil is where you find it. Just ask the Heldt Bros., who specialize in going where oil is — and roads just ain't. That means, too, that trailer brakes must withstand every kind of severe weather and road condition. So take a tip from Heldt Bros. — get Warner Electric Brakes.

Warner Electric Brakes give lightning-fast action with an infinite degree of braking control, plus low-cost installation and maintenance. There's full clearance under the tractor and trailer — nothing to get knocked off or leak — no exposed braking equipment — no rods to rattle — no tubing to split — only simple wiring to each wheel.

For full information see your nearest Warner Electric Brake dealer — or write:

WARNER ELECTRIC BRAKE MANUFACTURING CO.
BELOIT, WISCONSIN

Revolutionary!
Warner Electric Brakes of 2-shoe construction in sizes 16½" x 5", 16½" x 6", and 16½" x 7". A really new concept of super-stopping power. Ask about them.

WARNER
THE ORIGINAL AND PROVEN
ELECTRIC BRAKES
SINCE 1927

(Continued from Page 112)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
	Reo, Con't.																													
1	E-19B		150	150	16000	5035▲	7.50/20	8.25/20	Own 245	6–3 1/16x4 1/4	245	6.2	192	89–3100	7–2 5/16x10.7	Y	WG T97	4	Tim E100♦	HF	H	5.28–6.8	Tim 30000	LT4IVH	310	482	var	TX	85 1/4	8 1/2 x2 1/2 x 1/2	T
2	E-19C		165	165	16000	5120▲	7.50/20	8.25/20	Own 245	6–3 1/16x4 1/4	245	6.2	192	89–3100	7–2 5/16x10.7	Y	WG T97	4	Tim E100♦	HF	H	5.28–6.8	Tim 30000	LT4IHV	310	482	var	TX	100 3/8	8 1/2 x2 1/2 x 1/2	Tf
3	E-19L		187‡	187‡	16000	5250▲	8.25/20	8.25/20	Own 245	6–3 1/16x4 1/4	245	6.2	192	89–3100	7–2 5/16x10.7	Y	Cla 185F	4	Tim E100♦	HF	H	5.28–6.8	Tim 30000	LT4IVH	310	482	var	TX	123 3/4	9x3x 1/4	T
4	E-21A		125	125	16500	5155▲	8.25/20	8.25/20	Own 292	6–3 7/16x4 1/2	292	6.5	224	124–3300	7–2 1/2x9.408	Y	WG T97	4	Tim E100♦	HF	H	5.28–6.8	Tim 30000	LT4IVH	340	482	var	TX	60 3/8	8 1/2 x2 1/2 x 1/2	T
5	E-21B		150	150	16500	5315▲	8.25/20	8.25/20	Own 292	6–3 7/16x4 1/2	292	6.5	224	124–3300	7–2 1/2x9.408	Y	WG T97	4	Tim E100♦	HF	H	5.28–6.8	Tim 30000	LT4IVH	340	482	var	TX	85 3/8	9x3x 1/4	T
6	E-21C		170	170	16500	5440▲	8.25/20	8.25/20	Own 292	6–3 7/16x4 1/2	292	6.5	224	124–3300	7–2 1/2x9.408	Y	WG T97	4	Tim E100♦	HF	H	5.28–6.8	Tim 30000	LT4IVH	340	482	var	TX	105 3/8	9x3x 1/4	T
7	E-21L		187‡	187‡	16500	5575▲	8.25/20	8.25/20	Own 292	6–3 7/16x4 1/2	292	6.5	224	124–3300	7–2 1/2x9.408	Y	Cla 185F	4	Tim E100♦	HF	H	5.28–6.8	Tim 30000	LT4IVH	340	482	var	TX	123 3/8	9x3x 1/4	Tf
8	E-21RA		130	130	19000	6165▲	9.00/20	9.00/20	Own 292	6–3 7/16x4 1/2	292	6.5	224	124–3300	7–2 1/2x9.408	Y	Cla 205V	5	Tim H100△	HF	H	5.28–6.8	Tim 31104	LT4IVH	370	640	var	TX	65 3/8	9x3x 1/4	T
9	E-21RT		130	130	19000	6740▲	9.00/20	9.00/20	Own 292	6–3 7/16x4 1/2	292	6.5	224	124–3300	7–2 1/2x9.408	Y	Cla 205V	5	Tim H300△	HFd	H	6.67–8.85	Tim 31104	LT4IVH	370	640	var	TX	65 3/8	9x3x 1/4	T
10	E-21RT		150	150	19000	6330▲	9.00/20	9.00/20	Own 292	6–3 7/16x4 1/2	292	6.5	224	124–3300	7–2 1/2x9.408	Y	Cla 205V	5	Tim H100△	HF	H	5.28–6.8	Tim 31104	LT4IVH	370	640	var	TX	85 3/8	9x3x 1/4	T
11	E-21RC		170	170	19000	6465▲	9.00/20	9.00/20	Own 292	6–3 7/16x4 1/2	292	6.5	224	124–3300	7–2 1/2x9.408	Y	Cla 205V	5	Tim H100△	HF	H	5.28–6.8	Tim 31104	LT4IVH	370	640	var	TX	105 3/8	9x3x 1/4	Tf
12	E-21RL		185	185	19000	6600▲	9.00/20	9.00/20	Own 292	6–3 7/16x4 1/2	292	6.5	224	124–3300	7–2 1/2x9.408	Y	Cla 205V	5	Tim H100△	HF	H	5.28–6.8	Tim 31104	LT4IVH	370	640	var	TX	120 3/8	9 1/4 x3 1/2 x 1/2	Tf
13	E-22A		130	130	20000	6165▲	9.00/20	9.00/20	Own 331	6–4 1/16x4 1/2	331	6.4	264	140–3200	7–2 1/2x9.408	Y	Cla 205V	5	Tim H100△	HF	H	5.28–6.8	Tim 31104	LT4IVH	370	640	var	TX	65 3/8	9x3x 1/4	T
14	E-22T		130	130	20000	6740▲	9.00/20	9.00/20	Own 331	6–4 1/16x4 1/2	331	6.4	264	140–3200	7–2 1/2x9.408	Y	Cla 205V	5	Tim H300	HFd	H	6.67–8.85	Tim 31104	LT4IVH	370	640	var	TX	65 3/8	9x3x 1/4	T
15	E-22B		150	150	20000	6330▲	9.00/20	9.00/20	Own 331	6–4 1/16x4 1/2	331	6.4	264	140–3200	7–2 1/2x9.408	Y	Cla 205V	5	Tim H100△	HF	H	5.28–6.8	Tim 31104	LT4IVH	370	640	var	TX	85 3/8	9x3x 1/4	T
16	E-22C		170	170	20000	6465▲	9.00/20	9.00/20	Own 331	6–4 1/16x4 1/2	331	6.4	264	140–3200	7–2 1/2x9.408	Y	Cla 205V	5	Tim H100△	HF	H	5.28–6.8	Tim 31104	LT4IVH	370	640	var	TX	105 3/8	9x3x 1/4	Tf
17	E-22L		185	185	20000	6600▲	9.00/20	9.00/20	Own 331	6–4 1/16x4 1/2	331	6.4	264	140–3200	7–2 1/2x9.408	Y	Cla 205V	5	Tim H100△	HF	H	5.28–6.8	Tim 31104	LT4IVH	370	640	var	TX	120 3/8	9 1/4 x3 1/2 x 1/2	Tf
18	E-22RA		130	130	22000	6705▲	10.00/20	10.00/20	Own 331	6–4 1/16x4 1/2	331	6.4	264	140–3200	7–2 1/2x9.408	Y	Cla 205V	5	Tim L100△	HF	H	6.16–7.4	Tim 32500	LT4IVH	422	644	var	TX	65 3/8	9x3x 1/4	T
19	E-22RT		130	130	22000	7205▲	10.00/20	10.00/20	Own 331	6–4 1/16x4 1/2	331	6.4	264	140–3200	7–2 1/2x9.408	Y	Cla 205V	5	Tim L300△	HFd	H	6.32–8.22	Tim 32500	LT4IVH	422	644	var	TX	65 3/8	9x3x 1/4	T
20	E-22RB		150	150	22000	6910▲	10.00/20	10.00/20	Own 331	6–4 1/16x4 1/2	331	6.4	264	140–3200	7–2 1/2x9.408	Y	Cla 205V	5	Tim L100△	HF	H	6.16–7.4	Tim 32500	LT4IVH	422	644	var	TX	85 3/8	9x3x 1/4	T
21	E-22RC		170	170	22000	7100▲	10.00/20	10.00/20	Own 331	6–4 1/16x4 1/2	331	6.4	264	140–3200	7–2 1/2x9.408	Y	Cla 205V	5	Tim L100△	HF	H	6.16–7.4	Tim 32500	LT4IVH	422	644	var	TX	105 3/8	9x3x 1/4	Tf
22	E-22RL		185	185	22000	7260▲	10.00/20	10.00/20	Own 331	6–4 1/16x4 1/2	331	6.4	264	140–3200	7–2 1/2x9.408	Y	Cla 205V	5	Tim L100△	HF	H	6.16–7.4	Tim 32500	LT4IVH	422	644	var	TX	120 3/8	9 1/4 x3 1/2 x 1/2	Tf
23	E-22SA		130	130	24000	7630▲	10.00/20	11.00/20	Own 331	6–4 1/16x4 1/2	331	6.4	264	140–3200	7–2 1/2x9.408	Y	Cla 290V	5	Tim Q100△	HF	H	5.28–7.8	Tim 35000	TWs4IA	638	934	var	TX	65 3/8	9 1/4 x3 1/2 x 1/2	T
24	E-22ST		130	130	24000	8090▲	10.00/20	11.00/20	Own 331	6–4 1/16x4 1/2	331	6.4	264	140–3200	7–2 1/2x9.408	Y	Cla 290V	5	Tim Q300△	HFd	H	6.53–8.53	Tim 35000	TWs4IA	638	934	var	TX	65 3/8	9 1/4 x3 1/2 x 1/2	T
25	E-22SB		150	150	24000	7810▲	10.00/20	11.00/20	Own 331	6–4 1/16x4 1/2	331	6.4	264	140–3200	7–2 1/2x9.408	Y	Cla 290V	5	Tim Q100△	HF	H	5.28–7.8	Tim 35000	TWs4IA	638	934	var	TX	85 3/8	9 1/4 x3 1/2 x 1/2	T
26	E-22SC		170	170	24000	7995▲	10.00/20	11.00/20	Own 331	6–4 1/16x4 1/2	331	6.4	264	140–3200	7–2 1/2x9.408	Y	Cla 290V	5	Tim Q100△	HF	H	5.28–7.8	Tim 35000	TWs4IA	638	934	var	TX	105 3/8	9 1/4 x3 1/2 x 1/2	Tf
27	E-22SL		185	185	24000	8150▲	10.00/20	11.00/20	Own 331	6–4 1/16x4 1/2	331	6.4	264	140–3200	7–2 1/2x9.408	Y	Cla 290V	5	Tim Q100△	HF	H	5.28–7.8	Tim 35000	TWs4IA	638	934	var	TX	120 3/8	9 1/4 x3 1/2 x 1/2	Tf
28	E-23SA		130	130	24000	7190▲	9.00/20	10.00/20	Con T6371	6–4 1/16x4 3/8	371	5.8	294	126–2600	7–2 1/2x13.6	Y	Cla 270V	5	Tim L100△	HF	H	6.16–7.4	Tim 32500	LT4IVH	422	644	var	TX	65 3/8	9 1/4 x3 1/2 x 1/2	T
29	E-23ST		130	130	24000	7490▲	9.00/20	10.00/20	Con T6371	6–4 1/16x4 3/8	371	5.8	294	126–2600	7–2 1/2x13.6	Y	Cla 270V	5	Tim L100△	HF	H	6.16–7.4	Tim 32500	LT4IVH	422	644	var	TX	65 3/8	9 1/4 x3 1/2 x 1/2	T
30	E-23SB		150	150	24000	7335▲	9.00/20	10.00/20	Con T6371	6–4 1/16x4 3/8	371	5.8	294	126–2600	7–2 1/2x13.6	Y	Cla 270V	5	Tim L100△	HF	H	6.16–7.4	Tim 32500	LT4IVH	422	644	var	TX	85 3/8	9 1/4 x3 1/2 x 1/2	T
31	E-23SC		170	170	24000	7505▲	9.00/20	10.00/20	Con T6371	6–4 1/16x4 3/8	371	5.8	294	126–2600	7–2 1/2x13.6	Y	Cla 270V	5	Tim L100△	HF	H	6.16–7.4	Tim 32500	LT4IVH	422	644	var	TX	105 3/8	9 1/4 x3 1/2 x 1/2	Tf
32	E-23SL		185	185	24000	7650▲	9.00/20	10.00/20	Con T6371	6–4 1/16x4 3/8	371	5.8	294	126–2600	7–2 1/2x13.6	Y	Cla 270V	5	Tim L100△	HF	H	6.16–7.4	Tim 32500	LT4IVH	422	644	var	TX	120 3/8	9 1/4 x3 1/2 x 1/2	Tf
33	E-23A		130	130	24000	7630▲	10.00/20	10.00/20	Con T6427	6–4 1/4x4 1/4	427	5.9	338	145–2600	7–2 1/2x13.6	Y	Cla 270V	5	Tim L100△	HF	H	6.16–7.4	Tim 32500	TWs4IA	514	644	var	TX	65 3/8	9 1/4 x3 1/2 x 1/2	T
34	E-23T		130	130	24000	8120▲	10.00/20	10.00/20	Con T6427	6–4 1/4x4 1/4	427	5.9	338	145–2600	7–2 1/2x13.6	Y	Cla 270V	5	Tim L100△	HF	H	6.16–7.4	Tim 32500	TWs4IA	514	644	var	TX	65 3/8	9 1/4 x3 1/2 x 1/2	T
35	E-23B		150	150	24000	7790▲	10.00/20	10.00/20	Con T6427	6–4 1/4x4 1/4	427	5.9	338	145–2600	7–2 1/2x13.6	Y	Cla 270V	5	Tim L100△	HF	H	6.16–7.4	Tim 32500	TWs4IA	514	644	var	TX	85 3/8	9 1/4 x3 1/2 x 1/2	T
36	E-23C		170	170	24000	7950▲	10.00/20	10.00/20	Con T6427	6–4 1/4x4 1/4	427	5.9	338	145–2600	7–2 1/2x13.6	Y	Cla 270V	5	Tim L100△	HF	H	6.16–7.4	Tim 32500	TWs4IA	514	644	var	TX	105 3/8	9 1/4 x3 1/2 x 1/2	Tf
37	E-23L		185	185	24000	8090▲	10.00/20	10.00/20	Con T6427	6–4 1/4x4 1/4	427	5.9	338	145–2600	7–2 1/2x13.6	Y	Cla 270V	5	Tim L100△	HF	H	6.16–7.4	Tim 32500	TWs4IA	514	644	var	TX	120 3/8	9 1/4 x3 1/2 x 1/2	Tf
38	E-23RA		130	130	26000	8020▲	10.00/20	11.00/20	Con T6427	6–4 1/4x4 1/4	427	5.9	338	145–2600	7–2 1/2x13.6	Y	Cla 270V	5	Tim Q100△	HF	H	5.28–7.8	Tim FD900	TWs4IA	620	928	var	TX	65 3/8	9 1/4 x3 1/2 x 1/2	T
39	E-23RT		130	130	26000	8480▲	10.00/20	11.00/20	Con T6427	6–4 1/4x4 1/4	427	5.9	338	145–2600	7–2 1/2x13.6	Y	Cla 270V	5	Tim Q100△	HF	H	5.28–7.8	Tim FD900	TWs4IA	620	928	var	TX	65 3/8	9 1/4 x3 1/2 x 1/2	T
40	E-23RB		150	150	26000	8175▲	10.00/20	11.00/20	Con T6427	6–4 1/4x4 1/4	427	5.9	338	145–2600	7–2 1/2x13.6	Y	Cla 270V	5	Tim Q100△	HF	H	5.28–7.8	Tim FD900	TWs4IA	620	928	var	TX	85 3/8	9 1/4 x3 1/2 x 1/2	T
41	E-23RC		170	170	26000	8360▲	10.00/20	11.00/20	Con T6427	6–4 1/4x4 1/4	427	5.9	338	145–2600	7–2 1/2x13.6	Y	Cla 270V	5	Tim Q100△	HF	H	5.28–7.8	Tim FD900	TWs4IA	620	928	var	TX	105 3/8	9 1/4 x3 1/2 x 1/2	Tf
42	E-23RL		185	185	26000	8520▲	10.00/20	11.00/20	Con T6427	6–4 1/4x4 1/4	427	5.9	338	145–2600	7–2 1/2x13.6	Y	Cla 270V	5	Tim Q100△	HF	H	5.28–7.8	Tim FD900	TWs4IA	620	928	var	TX	120 3/8	9 1/4 x3 1/2 x 1/2	Tf
43	30A		145	145	32000	11280▲	11.00/20	11.00/24	Con R6513	6–4 1/2x5 1/2	513	5.8	392	167–2600	7–3 1/4x14.7	Y	Spl 6252A	5	Tim S300△	HFd	H	6.42–8.38	Tim 36000	TWs4IA	722	1038	var	TI	67 1/2	10 1/2 x3 1/2 x3 1/2	T
44	30B		165	165	32000	11360▲	11.00/20	11.00/24	Con R6513	6–4 1/2x5 1/2	513	5.8	392	167–2600	7–3 1/4x14.7	Y	Spl 6252A	5	Tim U200△	HFd	H	7.08	Tim 36000	TWs4IA	722	1038	var	TI	87 1/2	10 1/2 x3 1/2 x3 1/2	T
45	31A		145	145	32000	11280▲	11.00/20	11.00/24	Con R6602	6–4 7/8x5 1/2	602	5.8	456	194–2600	7–3 1/4x14.7	Y	Spl 6252A	5	Tim S300△	HFd	H	6.42–8.38	Tim 36000	TWs4IA	722	1038	var	TI	67 1/2	10 1/2 x3 1/2 x3 1/2	T
46	31B		165	165	32000	11360▲	11.00/20	11.00/24	Con R6602	6–4 7/8x5 1/2	602	5.8	456	194–2600	7–3 1/4x14.7	Y	Spl 6252A	5	Tim U200△	HFd	H	7.08	Tim 36000	TWs4IA	722	1038	var	TI	87 1/2	10 1/2 x3 1/2 x3 1/2	T
47	Sterling....HD97		148	175	24000	9150	9.00/20	11.00/20	Wau 6MZA	6–4 1/4x4 3/4	404	5.6	290	130–3000	7–2 1/2x12 1/2	Y	Fu 5A43	5	Tim Q100DPH	FHy	R	5.29–7.80	Tim 35011H	T4IHV	524	926	A	TX	67	9x7x 1/4	A
48	HD105		148	175	24000	9550	10.00/20	11.00/22	Wau 6MZA	6–4 1/4x4 3/4	404	5.6	290	130–3000	7–2 1/2x12 1/2	Y	Fu 5A43	5	Tim R100DPH	FHy	R	5.29–7.40	Tim 35011H	T4IHV	524	926	A	TX	67	9x3 1/4 x 1/4	A
49	HD115		148	175	32000	10650	10.00/20	11.00/24	Wau 6SRKR	6–4 9/16x5 1/4	517	5.5	368	125–2250	7–3x13 3/4	Y	Fu 5A62	5	Tim S200P	2F	R	6.42–9.83	Tim 36000TW	Ws4IA	722	1054	A	TX	67	9x3 1/4 x 1/4	A
50	HD145		148	175	36000	11250	11.00/20	12.00/24	Wau 6SRKR	6–4 9/16x5 1/4	517	5.5	368	125–2250	7–3x13 3/4	Y	Fu 5A62	5	Tim 79721W	2F	R	7.69–11.36	Tim 36000TW	Ws4IA	670	1118	A	TX	67	9 1/4 x3 1/2 x 1/2	A
51	(D)....HD115H		158	185	32000	11950	10.00/20	11.00/24	Cum HB600	6–4 1/2x6	672	17.5	500	150–1800	7–4 1/2x16 1/2	Y	Fu 4B86	4	Tim S200P	2F	R	6.42–9.83	Tim 36000TW	Ws4IA	722	1054	A	TX	68	9 1/4 x3 1/2 x 1/2	A
52	(D)....HD145H		158	185	36000	12550	11.00/20	12.00/24	Cum HB600	6–4 1/2x6	672	17.5	500	150–1800	7–4 1/2x16 1/2	Y	Fu 4B86	4	Tim 79721W	2F	R	7.69–11.36	Tim 36000TW	Ws4IA	670	1118	A	TX	68	9 1/4 x3 1/2 x 1/2	A
53	HC97		148	175	24000	9200	9.00/20	11.00/20	Wau 6MZA	6–4 1/4x4 3/4	404	5.6	290	130–3000	7–2 1/2x12 1/2	Y	Fu 5A43	5	Own 97H	CD	R	6.70–10.82	Tim 35011H	T4IHV	518	852	A	TX	67	9x7x 1/4	A
54	HC105		148	175	28000	9700	10.00/20	11.00/22	Wau 6MZA	6–4 1/4x4 3/4	404	5.6	290	130–3000	7–2 1/2x12 1/2	Y	Fu 5A43‖	15	Own 137H	CD	R	6.70–10.82	Tim 35011H	T4LIHV	540	842	A	TX	67	9x3 1/4 x 1/4	A
55	HC115		148	175	32000	10350	10.00/20	11.00/24	Wau 6SRKR	6–4 9/16x5 1/4	517	5.5	368	125–2250	7–3x13 3/4	Y	Fu 5A62‖	15	Own 137W	CD	R	6.70–10.82	Tim 36000TW	Ws4IA	648	1064	A	TX	67	9x3 1/4 x 1/4	A
56	HC144		148	175	36000	11250	10.00/22	12.00/24	Wau 6SRKR	6–4 9/16x5 1/4	517	5.5	368	125–2250	7–3x13 3/4	Y	Fu 5A62‖	15	Own 148W	CD	R	6.70–10.82	Tim 36000TW	Ws4IA	708	1102	A	TX	67	9 1/4 x3 1/2 x 1/2	A
57	HC147		148	175	36000	11500	10.00/22	12.00/24	Wau 6SRKR	6–4 9/16x5 1/4	517	5.5	368	125–2250	7–3x13 3/4	Y	Fu 5A62‖	15	Own 147W	CD	R	6.70–10.82	Tim 36000TW	Ws4IA	708	1102	A	TX	67	9 1/4 x3 1/2 x 1/2	A
58	HC175		167	185	45000	14600	12.00/24†	14.00/24‡	Wau 145GK	6–5 1/4x6	779	6.2	585	186–2100	7–3 1/2x17 3/4	Y	Fu 4B86●	12	Own 175W	CD	R	7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	TX	77	9 1/4 x3 1/2 x 1/2	A
59	HC250		178	190	60000	18400	14.00/24‡	14.00/24‡	Wau 145GK	6–5 1/4x6	779	6.2	585	186–2100	7–3 1/2x17 3/4	Y	Fu 4B86●	12	Own 251W	CD	R	7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	JX	95	12x3 1/2 x 1/2	AL
60	(D)....HC115H		167	185	32000	12250	10.00/20	11.00/24	Cum HB600	6–4 1/2x6	672	17.5	500	150–1800	7–4 1/2x16 1/2	Y	Fu 4B86●	12	Own 137W	CD	R	6.70–10.82	Tim 36000TW	Ws4IA	648	1064	A	TX	77	9x3 1/4 x 1/4	A
61	(D)....HC175H		167	185	45000	14930	12.00/24†	14.00/24‡	Cum HBD600	6–4 1/2x6	672	17.5	500	150–1800	7–4 1/2x16 1/2	Y	Fu 4B86●	12	Own 175W	CD	R	7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	TX	77	9 1/4 x3 1/2 x 1/2	A
62	(D)....HC250H		178	190	60000	18700	14.00/24‡	14.00/24‡	Cum HBD600	6–4 1/2x6	672	17.5	500	150–1800	7–4 1/2x16 1/2	Y	Fu 4B86●	12	Own 251W	CD	R	7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	JX	95	12x3 1/2 x 1/2	AL
63	Studebaker....2R5	1022	112	112	4600	2125	6.00/16S	6.50/16S	Own 1R	6–3x4	170	7.0	138	85–4000	4–2 1/8 x5 1/8	N	Own 673519	3	Own 673874	Hy	H	**–4.82	Own 677574	Wg4IH	170	276	CO	2I	40	7x2 1/8 x 1/2	T
64	2R10	1088	122	122	6100	2400	6.50/16S	7.50/16S	Own 1R	6–3x4	170	7.0	138	85–4000	4–2 1/8 x5 1/8	N	Own 673519	3	Own 677806	SF	H	5.57–4.86	Own 677574	Wg4IH	198	314	CO	2I	50	7 1/8 x2 1/8 x 1/8	T
65	2R15–21	1236	121	121	7800	3005	7.00/17S	7.00/20	Own 2R	6–3x4	170	7.0	138	85–4000	4–2 1/8 x5 1/8	N	Own 676044	4	Own 677768	SF	H	5.83–6.66	Own 677091	LH4IH	226	342	Ce	TX	50 1/4	8x2 1/8 x 1/4	T
66	2R15–31	1255	131	131	10000	3065	7.00/17S	7.00/20	Own 2R	6–3x4	170	7.0	138	85–4000	4–2 1/8 x5 1/8	N	Own 676044	4	Own 677768	SF	H	5.83–6.66	Own 677091	LH4IH	226	342	Ce	TX	60 1/4	8 1/8 x2 1/4 x 1/4	T
67	2R16	1291	131	195	14000	3695	6.50/20D	8.25/20	Own 3R	6–3 1/8x4 3/8	226	6.5	174	94–3400	4–2 1/2x5 1/2	N	Own 676045	4	Own 675732♦♦	SF	H	6.66–5.66	Own 674484	LH4IH	294	442	Ce	TX	60 1/4	8 1/2 x2 3/4 x 1/2	T
68	2R16A	1326	131	195	14000	3695	6.50/20 D	8.25/20	Own 4R	6–3 1/8x4 3/4	245	7.0	205	102–3200	4–2 1/2x5	N	Own 678790	4	Own 675732♦	HF	H	6.66–5.83	Own 674484	LH4IH	294	442	Ce	TX	60 3/8	8 1/2 x2 3/4 x 1/2	T
69	2R17	1592	131	195	16000	4180	7.50/20D	8.25/20	Own 3R	6–3 1/8x4 3/8	226	6.5	174	94–3400	4–2 1/2x5 1/2	N	Own 676045	4	Own 675571♦♦	Hy	H	6.80––	Own 674484	LH4IH	367	553	Ce	TX	60 1/4	8 1/2 x2 3/4 x 1/2	P
70	2R17A	1627	131	195	16000	4180	7.50/20 D	9.00/20	Own 4R	6–3 1/8x4 3/4	245	7.0	205	102–3200	4–2 1/2x5	N	Own 678794	4	Own 675571♦♦	Hy	H	6.80–6.20	Own 674484	LH4IH	367	553	Ce	TX	60 3/8	8 1/2 x2 3/4 x 1/2	P

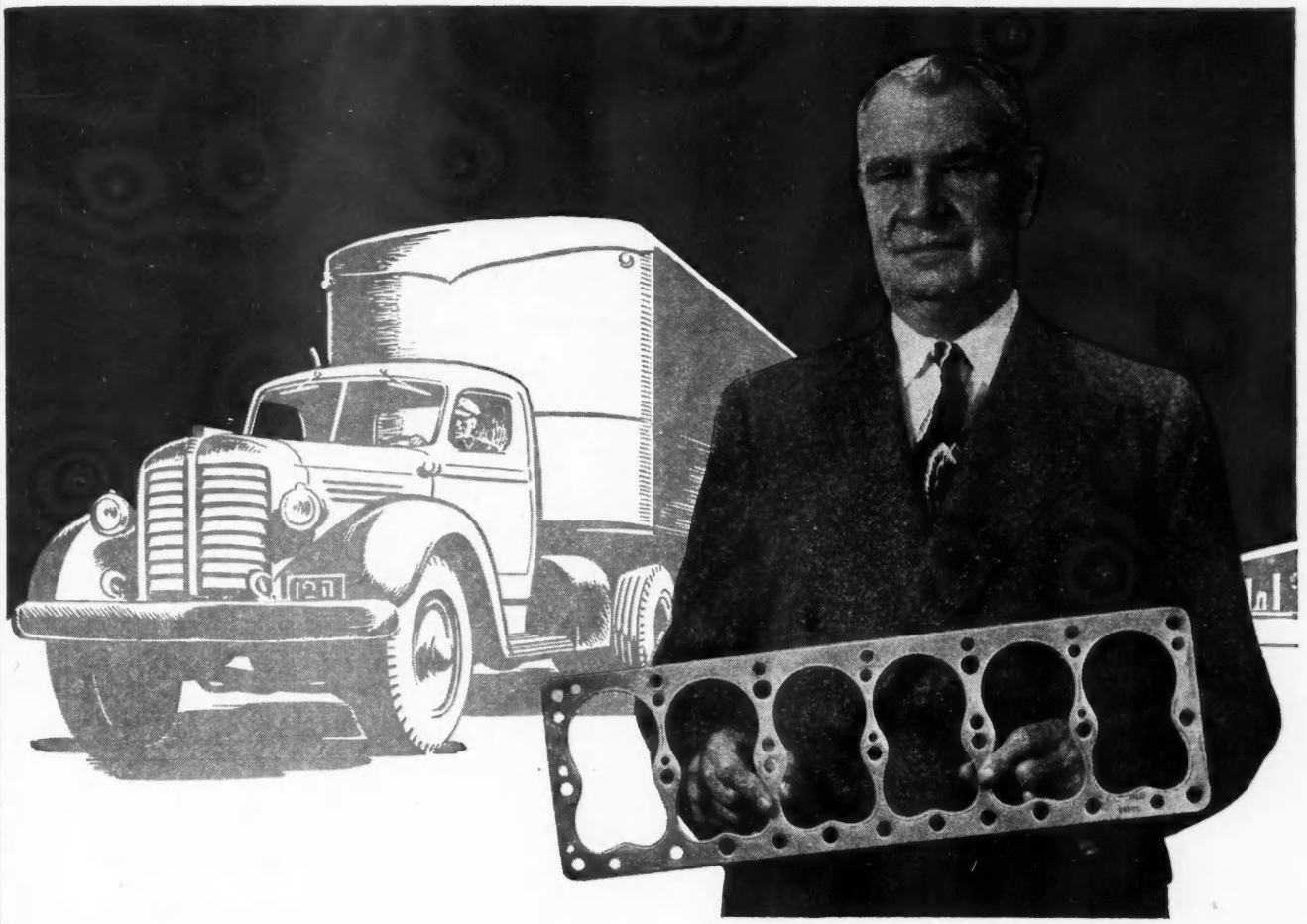
(Turn to Page 116, Please)

▲ Includes Cab.
♦—Two speed axle available.
§ Auxiliary Transmission Own OJ.

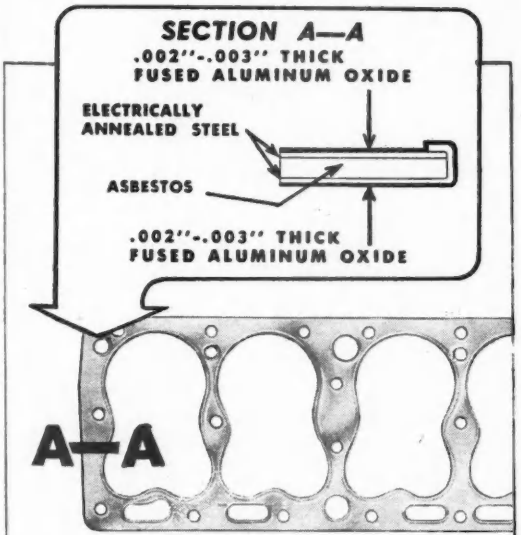
‡ Rear only: Front 12.00/24.
♥—6231A Spicer Auxiliary Transmission.
● Auxiliary transmission Own FJ.

♥—Lockheed type front and Timken dual primary rear brakes
♦♦—Two speed 6.13–8.10 optional.
♦—Two speed 6.13–8.10 and H.D. 6.20–6.80 optional.

‖—8031 F-G Spicer Transmission available
△—Double reduction and 2-speed available.
† Rear only: Front 11.00/24.



"One trial and you, too, will sell yourself on . . FITZGERALD Metallic Aluminum-Fused-Oxide Steel Asbestos GASKETS*"



GREASE RETAINERS — CORK GASKETS — FITZ-RITE TREATED FIBER GASKETS FOR OIL, GASOLINE AND WATER CONNECTIONS

COMPLETE SETS FOR MOTOR REBUILDERS

FITZGERALD Gaskets

SINCE 1906

SAYS P. J. FITZGERALD

The maintenance supervisor for a large fleet of vehicles recently told me how he became completely sold on Fitzgerald Metallic Aluminum-Fused-Oxide Steel Asbestos Gaskets*. His case is typical of many.

No gaskets he had previously tried would stand the terrific heat and pressures developed by his high compression engines. Road failures were costing him real money. Then he tried Fitzgeralds. *Not a single one has failed.* Needless to say, he now uses Fitzgeralds exclusively.

Specially designed for high compression engines, Fitzgerald Metallic Aluminum-Fused-Oxide Steel Asbestos Gaskets combine the strength of steel, the corrosion resistance of aluminum oxide and top-grade asbestos filler. Their sealing action is positive and permanent. They are backed by nearly half a century of gasket craftsmanship.

*Service Mark Registration Pending

P. J. Fitzgerald
President

THE FITZGERALD MANUFACTURING CO.
Torrington, Connecticut

(Continued from Page 114)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Ward La Fr. . D-1		149	220	25000	▲ 9500	10.00/20	11.00/20	Con T6427	6-4¼x4½	427	5.1	340	152-2600	7-2⅞x13½	Y	Ful 5A430	5	Tim Q-100	B	R	••-6.83	Tim 35017TW	Ws4A	600	928	C	TM	68¼	9¼x3x¼	T
2	D-1C		149	220	29000	▲ 9500	11.00/20	11.00/22	Con T6427	6-4¼x4½	427	5.1	340	152-2600	7-2½x13½	Y	Ful 5A430	5	Tim S-200	S2	R	••-7.08	Tim 35017TW	Ws4A	673	1031	C	TM	68¼	9¼x3x¼	T
3	D-2K		149	220	29000	▲10000	11.00/20	11.00/22	Wau 140GK	6-4½x5½	525	6.4	425	168-2400	7-2¾x13	Y	Ful 5A620	5	Tim S-200	S2	R	••-7.84	Tim 35017TW	Ws4A	673	1031	C	TM	68¼	10x3½x¼	T
4	D-2Z		149	220	29000	▲10000	11.00/20	11.00/20	Wau 140GZ	6-4½x5½	554	6.4	456	184-2400	7-3¼x13⅞	Y	Ful 5C650	5	Tim S-200	S2	R	••-7.84	Tim 35017TW	Ws4A	673	1031	C	TM	68¼	10x3½x¼	T
5	D-3		149	220	29000	▲10000	11.00/20	11.00/22	Con R6572	6-4¾x5¾	572	5.9	440	189-2600	7-3¼x14½	Y	Ful 5C650	5	Tim S-200	S2	R	••-7.84	Tim 35017TW	Ws4B	673	1031	C	TM	68¼	10x3½x¼	T
6	D-3S		149	220	29000	▲10000	11.00/20	11.00/22	Con R6602	6-4⅞x5⅝	602	5.9	463	198-2600	7-3¼x14½	Y	Ful 5C650	5	Tim S-200	S2	R	••-7.84	Tim 35017TW	Ws4B	673	1031	C	TM	68¼	10x3½x¼	T
7	D-5		149	220	35000	▲12500	11.00/22	11.00/22	Cum HB600	6-4¾x6	672	17	500	150-1800	7-4½x16¾	Y	Ful 5C650	5	Tim U-200	S2	R	••-6.42	Tim 27463	Ws4B	681	1041	C	TM	68¼	10x3½x¼	T
8	Willys (8d.Del.)463	1295*	104	104	4000	*2752	6.50/15S	.....	Own 463	4-3½x4½	134	6.5	105	63-4000	3-2.33x5.48	N	WG T96	3	Spl 23-1	Hy‖	H	4.88-5.38	Own I Tr	B4IH	133	220	a	2I	.....	5x2¼x.063	TfD
9	Willys.....2WD	1295*	118	118	5300	*2788	6.50/16S‖	7.00/16S	Own 2WD	4-3½x4½	134	6.5	105	60-4000	3-2.33x5.48	N	WG T90E	3	Tim51540NX4	S‖	H	5.38-6.17	Cla F-154	B4IH	176	276	a	2I	42.28	5½x2x¼	TD
	Four-Wheel-Drive																														
10	Coleman.....G-55		136	150	30000	11750	11.00/20	12.00/20	Buda LO-525	6-4½x5½	525	6.7	400	150-2200	7-3x7¼	Y	Fu 5A650	5	OW-C375FXa	.....		9.66	....	OW	TW IA	598	9214	...	FD	96	9x4x⅜	C
11	Corbitt.....22FG		159	Opt	22000	.....	9.00/20	10.00/20	Con B6371	6-4⅛x4½	371	6.0	280	100-2600	7-2⅞x13½	Y	Fu 5A43	5	Tim R2090H	2F	H	•• -8.43	Tim F2090H	L4IHV	....	868	a	TD	74	9x3x¼	DL
12	Dodge....B-2-PW		126	126	8700	.....	6.00/16-8	9.00/16-8	Own T-137	6-3¼x4½	230	6.7	186	94-3200	4-2½x4.8	Y	NP-88790	4	Own T-137	HyF	H	4.89-5.83	Own T-137	O4IH	210	311	Co	TX	52‖	▲x2▲x6½	C
13	FWD.....HA		132	168	.....	▲7470	8.25/20D	10.00/20	Wau BZ	6-4x4¼	320	5.9	237	104-3000	7-2⅝x10¼	Y	Own H	5	Own H	SF	H	6.6 -9.01	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
14	HR		132	168	.....	▲8000	9.00/20	10.00/20	Wau MZA	6-4¼x4¼	404	5.6	291	129-2800	7-2⅝x12½	Y	Own H	5	Own H	SF	H	6.6 -9.01	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
15	HG		154	154	.....	▲8050	9.00/20	10.00/20	Wau MZA	6-4¼x4¼	404	5.6	291	129-2800	7-2⅝x12½	Y	Own H	5	Own H	SF	H	6.6 -9.01	Own H	L4IHV	391	807	a	T4	89¾	7▲x3x‖	C
16	SU		150	182	.....	▲10570	11.00/20D	12.00/20	Wau 8RKR	6-4½x5½	517	5.5	365	126-2400	7-3x13¾	Y	Own U	5	Own U	BF	H	6.7 -9.8	Own U	L4IHV	512	985	a	T4	90	8▲x3x‖	C
17	YU		150	182	.....	▲11570	11.00/20D	12.00/20	Wau 140GK	6-4½x5½	525	6.1	425	142-2250	7-3¼x13‖	Y	Own S	5	Own YU	SF	H	5.7-10.8	Own YU	Wg4IHV	539	804	a	T4	90	8▲x3x‖	C
18	ZU		150	182	.....	▲12540	11.00/20D	12.00/20	Wau 140GZ	6-4½x5½	554	6.4	460	188-2600	7-3¼x13‖	Y	Own S	5	Own ZU	SF	H	6.6-11.4	Own ZU	Wg4IHV	640	1106	a	T4	90	10▲x3x‖	C
19	M7G		150	180	.....	▲15500	12.00/20D	12.00/24	Wau 145GK	6-5¼x6	779	6.2	585	186-2000	7-3¼x17¾	Y	Own M	10	Tim 1758W	2F	H	5.9 -8.8	Wis F409W	WW4IA	644	1090	a	T4	90	10▲x3x‖	C
20	(D).....M7D		150	180	.....	▲16100	12.00/20D	12.00/24	Bu DC844	6-5¼x6½	844	...	605	180-1800	7-3¾x17	Y	Own M	10	Tim 1758W	2F	H	5.9 -8.8	Wis F409W	WW4IA	644	1090	a	T4	90	10▲x3x‖	C
21	M10G		150	180	.....	▲15800	11.00/24D	12.00/24	Wau 145GK	6-5¼x6	779	6.2	585	186-2000	7-3½x17¾	Y	Own M	10	Tim 79721W	2F	H	6.7 -9.2	WisF408CWX1	WW4IA	693	1144	a	T4	90	10▲x3x‖	C
22	(D).....M10D		150	180	.....	▲16400	11.00/24D	12.00/24	Bu DC844	6-5¼x6½	844	...	605	180-1800	7-3¾x17	Y	Own M	10	Tim 79721W	2F	H	6.7 -9.2	WisF408CWX1	WW4IA	693	1144	a	T4	90	10▲x3x‖	C
23	Marmon-MH440-4		158	170	24000	▲9800	9.00/20D	10.00/20	Her WXLC3	6-4¼x4¾	404	5.4	293	118-2800	7-2⅝x13¼	Y	Fu-MH31	5	Own 1121	2B	H	•• -8.43	Own 121	W....A	584	887	e	F	72	9‖x3x¼	T
24	Herr...MH-RC 4		161	...	26000	10550	9.00/20	10.00/20	Her RXC	6-4¾x5¼	529	6.3	390	131-2200	7-3x13¾	Y	Fu	5	Own 1121	2B	H	•• -8.15	Own 122	W....A	692	1039	e	F	72	10▲x3x▲	T
25	MH555-4		161	173	30000	▲11550	10.00/20D	11.00/20	Her RXC	6-4¾x5¼	529	6.3	390	131-2200	7-3x13¼	Y	Fu-MH33	5	Own 1122	2B	H	•• -8.43	Own 122	W....A	696	.....	...	F	72	10▲x3x▲	T
26	MH-RH 4		161	...	33000	11980	10.00/20	11.00/20	Her RXLDH	6-4¾x5¼	558	6.1	440	180-2600	7-3x13¾	Y	Fu	5	Own 1122	2B	H	•• -8.15	Own 122	W....A	696	.....	...	F	72	10▲x3x▲	T
27	(C).....R5-4		134	134	15500	▲5100	7.50/20D	7.50/20	Ford	8-3▲x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	S	H	•• -6.67	Own M5	F....H	303	563	a	F	60▲	7x2¼x▲	T
28	(C).....R6-4		158	158	15500	▲5331	7.50/20D	7.50/20	Ford	8-3▲x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	S	H	•• -6.67	Own M5	F....H	303	563	a	F	84▲	7x2¼x▲	T
29	(C).....LD7-4		114	...	5300	▲3500	15*	15*	Ford	8-3▲x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	S	H	•• -4.11	Own O	F....H	162	....	A	F	40▲	5‖x2¼x▲	T
30	(C).....R3-4		122	...	6800	▲4100	7.50/17	7.50/17	Ford	8-3▲x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	S	H	•• -4.86	Own I	F....H	186	....	A	F	48	6x2¼x▲	T
31	(C).....R4-4		134	...	10000	▲4900	7.00/20S	7.00/20	Ford	8-3▲x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	S	H	•• -5.33	Own	F....H	303	563	A	F	60▲	7x2¾x▲	T
32	(C).....R5-A-COE4		110	158	14000	▲5360	7.50/20D	7.50/20	Ford	8-3▲x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	S	H	•• -6.67	Own	F....H	303	563	A	F	60▲	7.08x2.8x¼	T
33	(C).....Q5-4		136	....	21500	▲7100	9.00/20	10.00/20	Ford	8-3½x4½	337	6.4	255	145-3600	3-2½x5.21	\	Ford	5	Ford	H	H	•• -6.80	Own	F....H	350	583	A	F	61	9x3x¼	T
34	(C).....Q6-4		160	....	21500	▲7200	9.00/20	10.00/20	Ford	8-3½x4½	337	6.4	255	145-3600	3-2½x5.21	Y	Ford	5	Ford	H	H	•• -6.80	Own	F....H	350	583	A	F	85	9x3x⅛	T
35	Q7-4		196	....	21500	▲7350	9.00/20	10.00/20	Ford	8-3½x4½	337	6.4	255	145-3600	3-2½x5.21	Y	Ford	5	Ford	H	H	•• -6.80	Own	F....H	350	583	A	F	85	9x3x⅛	T
36	Q5-L4		148	....	21500	7150	9.00/20	10.00/20	Ford	8-3½x4½	337	6.4	255	145-3600	3-2½x5.21	Y	Ford	5	Ford	H	H	•• -6.80	Own	F....H	350	583	A	F	85	9x3x⅛	T
37	Q6-L4		179	....	21500	7275	9.00/20	10.00/20	Ford	8-3½x4½	337	6.4	255	145-3600	3-2½x5.21	Y	Ford	5	Ford	H	H	•• -6.80	Own	F....H	350	583	A	F	85	9x3x⅛	T
38	Oshkosh....W-212		144	159	21000	▲ 8500	9.00/20D	9.00/20	Her JXLD	6-4x4½	339	...	272	130-3000	7-2½x10‖	Y	Fu 5A43	5	Own W212	SF	H	•• -7.2	Own W212	W4IHDV	400	665	Co	PX	82	8x3x¼	Tf
39	W-312		149	205	25000	▲10200	10.00/20D	11.00/20	Her WXLCO3	6-4¼x4¼	404	...	312	139-2600	7-2⅝x13¾	Y	Fu 5A43	5	Own W312	SF	H	•• -6.8	Own W312	W4IHDV	510	876	G	PX	82	8¼x½x¾	TF
40	W1700		150	205	28000	▲11000	11.00/20D	12.00/208	Her RXC	6-4¾x5¼	529	...	395	131-2200	7-3x13¼	Y	Fu 5A620	5	Own W1700	SF	H	•• -6.4	Own 1700	W4IHDV	570	980	G	PX	82	8¼ x3x¾	TF
41	W-700		150	205	30000	▲12000	11.00/20D	12.00/20	Her RXCO	6-4¾x5¼	529	...	395	131-2200	7-3x12¾	Y	Fu 5A650	10	Own W700	2F	H	•• -6.8	Own W700	L4IHV	630	975	G	PX	82	10 ½x3x ⅝	TF
42	(D)....W-703D		150	205	30000	▲12700	11.00/20D	12.00/20	Her DRXC	6-4½x5¼	529	...	398	147-2200	7-3 ½x13 ¼	Y	Fu 5A650	10	Own W700	2F	H	•• -6.8	Own W700	L4IHV	630	975	G	PX	82	10 ½x3x ⅝	TF
43	W-703		150	205	30000	▲12200	11.00/20D	12.00/20	Her RXLD	6-4¼x5¼	558	...	430	150-2200	7-3½x13¼	Y	Fu 5A650	10	Own W700	2F	H	•• -6.8	Own W700	L4IHV	630	975	G	PX	82	10 ½x3x ⅝	TF
44	W-705		150	205	30000	▲12200	11.00/20D	12.00/20	Her RXLD	6-4¼x5¼	558	...	430	150-2200	7-3½x13¼	Y	Fu 5A650	10	Own W700	2F	H	•• -6.8	Own W700	L4IHV	630	975	G	PX	82	10 ½x3x ⅝	TF
45	W-712		150	205	34000	▲12600	11.00/20D	12.00/20	Her RXLDH	6-4¼x5¼	558	...	462	190-2600	7-3½x13¾	Y	Fu 5A650	10	Own W712	2F	H	•• -6.8	Own W712	L4IHV	630	975	G	PX	82	10 ½x3x ⅝	TF
46	(D).....W-906		158	181	38000	▲15600	12.00/20D	14.00/208	Cum HB600	6-4½x6	672	...	500	150-1800	7-4½x16	Y	Fu 4A86	12	Own W906	2F	H	•• -6.2	Own W906	LT4IA	645	975	G	PX	90	10½x3 1x⅝	TF
47	(D).....W906R		158	181	39000	▲15700	12.00/20D	14.00/208	Cum HRB-600	6-5½x6	743	...	540	165-1800	7-4½x16	Y	Eu 4A86	12	Own W906R	2F	H	•• -6.2	Own W906R	LT4IA	645	975	G	PX	90	10½x3 1x⅝	TF
48	.....W2200		160	181	40000	▲16500	13.00/20D	14.00/208	Bu MO779	6-5¼x6	779	...	575	188-2100	7-3¾x17	Y	Fu 4A86	12	Own W2200	2F	H	•• -6.15	Own 2200	LT4IA	645	975	G	PX	90	10¼x3½x⅝	Tf
49	.....W2201		160	181	40000	▲16500	13.00/20D	14.00/208	Bu MO893	6-5¼x6	893	...	670	200-1800	7-3¾x17	Y	Fu 4A86	12	Own W2201	2F	H	•• -6.15	Own 2201	LT4IA	645	975	G	PX	90	10¼x3½x⅝	TF
50	(D).....W2204		160	181	46000	▲18500	13.00/20D	14.00/208	Bu 6DC844	6-5¼x6½	844	...	605	180-1800	7-3¾x17	Y	Fu 4A86	12	Own W2204	2F	H	•• -6.4	Own 2204	LT4IA	780	1190	G	PX	90	10¼x3½x⅝	LF
51	(D).....W2205		160	181	54000	▲19500	13.00/24D	14.00/24	Bu 6DC8844	6-5¼x6½	844	...	740	240-2100	7-3¾x17	Y	Fu5A920	10	Own W2205	2F	H	•• -6.3	Own W2205	LT4IA	780	1190	G	PX	90	10¼x3½x⅝	LF
52	.....W2206		160	181	54000	▲19000	13.00/24D	14.00/24	HS 400	6-5¾x7	■	...	930	295-2000	7-3¼x14▲	Y	Fu5A1120	10	Own W2206	2F	H	•• -6.3	Own W2206	LT4IA	780	1190	G	PX	90	10¼x3½x⅝	TF
53	(D).....W2208		160	181	46000	▲17700	13.00/20D	14.00/208	Cum NHB-600	6-5½x6	743	...	535	200-2100	7-4½x16½	Y	Fu 4A86	12	Own W2208	2F	H	•• -6.4	Own W2208	LT4IA	780	1190	G	PX	90	10½x3½x⅝	LF
54	.....W2209		160	181	54000	▲19500	13.00/24D	14.00/24	Cum NHRS600	6-5½x6	743	...	800	300-2100	7-4½x16½	Y	Fu 5A1120	10	Own W2209	2F	H	•• -6.30	Own W2209	LT4IA	780	1190	G	PX	90	10½x3½x⅝	LF
55	Sterling....DD115		160	178	32000	11500	10.00/20	11.00/24	Wau 6SRKR	6-4½x5½	517	5.5	368	125-2250	7-3x13¾	Y	Fu 5A624▼	10	Tim 1357W	2F	H	6.52-8.6	Tim F3110W	Ws4IA	644	984	A	TX	76	9x3¼x¼	A
56	(D).....DD145H		167	185	36000	13900	11.00/20	12.00/24	Cum HB600	6-4¾x6	672	17	500	150-1800	7-4½x16½	Y	Fu 4B86▼	10	Tim 1758W	2F	H	7.33-10.3	Tim F409CW	Ws4IA	644	984	A	TX	77	9¼x3¾x¾	A
57	Walter(c.f.)....FN		126	150	20000	7500	9.00/20D	10.00/20S	Wau MZA	6-4¼x4¾	404	5.6	290	125-2600	7-2⅝x12½	Y	Own FN	6	Own FNB	2	H	6.0-8.0	Own FN	O4IA	470	670	G	FI	84	7x2¾x1¼	C
58	(c.f.)..FZM		126	150	24000	8500	10.00/20D	12.00/20S	Wau MZA	6-4¼x4¼	404	5.6	290	125-2600	7-2⅝x12½	Y	Own FN	6	Own FMB	2	H	6.0-8.0	Own FJ	O4IA	470	670	G	FI	84	12x3½x½	B
59	(c.f.)..FCK		126	138	30000	10500	10.00/24D	11.00/24S	Wau 8RKR	6-4½x5½	517	5.5	365	125-2200	7-3x13¾	Y	Own FC	6	Own FCB	2	H	7.5-9.0	Own FC	O4IA	585	890	D	FI	84	13x3¾x½	B
60	(c.f.)....FC		138	162	32000	11000	11.00/24D	12.00/24S	Wau 8RKR	6-4½x5½	517	5.5	365	125-2200	7-3x13¾	Y	Own FC	6	Own FCB	2	H	7.5-9.0	Own FCR	O4IA	585	890	D	FI	96	14x3¾x½	B
61	(c.f.)..FGB		126	162	32000	12000	11.00/24D	12.00/24S	Wau 145GK	6-5¼x6	779	5.7	580	185-2000	7-3½x17¾	Y	Own FA	6	Own FCB	2	H	7.5-9.0	Own FCR	O4IA	585	890	D	FI	84	14x3¾x½	B
62	(c.f.)..FGR		126	162	42000	13000	12.00/24D	12.00/24	Wau 145GK	6-5¼x6	779	5.7	580	185-2000	7-3½x17¾	Y	Own FA	6	Own FCR	2	H	7.5-9.0	Own FCR	O4IA	585	890	D	FI	89	14x3¾x½	B
63	Ward La Fr..FD1		.....	.....	35000	▲11500	11.00/22	11.00/22	Cont 6513	6-4½x5¾	513	5.9	405	180-2800	7-3¼x14½	..	Ful 5A620	5	Tim R462W	S2	R	•• -8.15	Tim F3100W	BW4IA	627	1029	Co	PM	.....	10x3x▲	C
64	(D).....FD2		.....	.....	35000	▲12000	11.00/24	11.00/24	Cum HB600	6-5½x6	672	17	500	150-1800	7-4½x16¾	..	Ful 5A920	5	Tim R462W	S2	R	•• -8.15	Tim F3100W	BW4IA	627	1029	Co	PM	.....	10x3x▲	C

(Turn to Page 118, Please)

‖ Rear only; Front 6.00/16.
▲ Includes cab.

*—Complete vehicle with pick-up type body.
▼ Timken T77 2-speed Transfer Case.

‖—Timken T76-Two speed transfer case.
■—1091 cu. in.

Standards are established by usage

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(Continued from Page 116)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Approved Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Willys Jp...CJ-3A	1195*	80	80	3500	*2169	6.00/16	7.00/15	Own CJ-3A	4-3⅛x4⅝	134	6.5	105	60–4000	3–2.33x5.48	N	WG T90C	‡6	Spl 41-2	Hy‡	H	** –5.38	Spl 25	B4IH	118	198	a	F	42.28	4x1¾x⅜	P
2	.....4WD	1695*	118	118	5300	*2920	7.00/16	.....	Own 4WD	4-3⅛x4⅜	134	6.5	105	60–4000	3–2.33x5.48	Y	WGT90A	‡6	Tim51540NX4	8½	H	** –5.38	Spl 25	B4IH	176	276	a	2I		5½x2x⅜	TD
	Six-Wheelers																														
	Wheels ▼ Driven																														
3	Dodge...B-I-VX	.....	154	190	34000	.....	9.00/20	10.00/20	Own T159	6–3¼x5	331	6.5	270	128–3000	7–3x11.2	Y	NP 88450	5	Tim SBD1555	HyF	..	6.8 –7.2	T-35020NX9	O6IA	727	1056	C	TX	84	10x3x¼	CP
4	Duplex....TH6	.....	162	220	30000	9180	8.25/20	9.00/20	Her JXD	6–4x4½	320	6.2	240	113–3000	7–2½x10‡‡	Y	Fu 5B33▲	10	Tim SBD1055	BF	L	**–6.16	Tim 32502H	L6IHV	513	839	A	TX	83½	9½x3½x⅜	L
5	.....RH-6	.....	160	208	40000	11500	10.00/20	11.00/20	Her WXLC3	6–4½x4¾	404	5.8	312	134–2600	7–2⅝x13½	Y	Fu 5A43	5	Tim SD3010	2F	R	8.27	Tim 35100	WS61A	1075	1525	A	TX	73½	10½x3½x⅜	L
6	(D).....L6	.....	172	208	45000	15000	11.00/20	12.00/20	Cum HB600	6–4 7/16x6	672	17.	495	150–1800	7–4½x16½	Y	Fu 5A920	5	Tim SD454	SF2	L	6.8–8.15	Tim 26450	Ws6IA	1137	1625	A	TX	77½	10½x3½x⅜	L
7	Federal....663MA	.....	189	225	40000	14500	10.00/20	10.00/22	Con R6602	6–4⅞x5¾	602	...	466	205–3000	7–3¼x14½	Y	Fu 5A65▼	15	T SW3012P	WF	R	** –6.16	Tim 36000TW	Ws6IA	1082	1569	a	TD	108	10½x3½x⅜	T
8	.....664MAB	.....	189	225	5 x.00	15850	11.00/22	12.00/20	Con R6602	6–4⅞x5⅜	602	...	466	205–3000	7–3¼x14½	Y	Spl 7741▼	12	Tim SW456P	WF	R	** –7.6	Tim 27452W	Ws6IA	1308	1888	a	TD	108	10½x3½x⅜	T
9	.....664MA	.....	189	225	55000	1o950	11.00/22	12.00/20	Con R6602	6–4⅞x5⅜	602	...	466	205–3000	7–3¼x14½	Y	Spl 7741▼	12	Tim SD462P	BR	R	** –8.15	Tim 27452W	Ws6IA	1092	1624	a	TD	108	10½x3½x⅜	T
10	.....629M	.....	163	199	27?00	8600	8.25/20	9.00/20	Her JXDF	6–4x4¼	320	...	250	131–3200	7–2½x10‡‡	Y	Cla 205V‡‡▲	10	TSBD1055dph	SF	R	7.53 10.35	Tim 32514H	LT61HV	544	914	a	TX	84	9⅞x3½x¼	TL
11	.....629ML	.....	163	199	27500	8635	8.25/20	9.00/20	Her JXLDF	6–4x4½	339	...	272	131–3200	7–2½x10‡‡	Y	Cla 205V‡‡▲	10	TSBD1055dph	SF	R	7.53 10.35	Tim 32514H	LT61HV	544	914	a	TX	84	9⅞x3⅝x¼	T
12	.....635M	.....	167	203	36000	10400	9.00/20	9.00/20	Con T6371F	6–4 7/16x4⅝	371	...	290	140–3000	7–2¼x13½	Y	Cla 290VO▲	10	TSBD1555dph	SF	R	8.33 11.47	Tim 35011H	LT61HV	752	1132	a	TX	84½	10½x3½x⅜	T
13	.....645M	.....	167	215	38000	12325	10.00/22	10.00/22	Con T6427F	6–4 7/16x4⅜	427	...	347	155–2600	7–2¾x13½	Y	Cla 290VO	5	T-SD3010P	BR	R	** –9.16	Tim 35011TW	Ws6IA	1073	1550	a	TD	84½	10½x3½x⅜	T
14	F.W.D.....H6x6	.....	Opt	Opt	.....	▲12150	9.00/20D	10.00/20	Wau MZA	6–4¼x4¾	404	5.6	291	129–2800	7–2½x12½	Y	Own H	10	Own H	SF	L	** –7.45	Own H	L6IHV	647	1281	a	T6	Opt	9x3x¼	T
15	.....M6x6G	.....	Opt	Opt	.....	▲21000	11.00/24D	12.00/24	Wau 145GK	6–5½x6	779	6.2	585	186–2000	7–3½x17¾	Y	Own M	10	Wis SD462	2F	L	** –6.06	Wis F409	WW6IA	1080	1680	a	T6	Opt	10⅞x3x‡‡	P
16	(D)....M6X6D	.....	Opt	Opt	.....	▲21600	11.00/24D	12.00/24	Bu DC844	6–5¾x6½	844	...	605	180–1800	7–3¾x17	Y	Own M	10	Wis SD462	2F	L	** –5.6	Wis F409	WW6IA	1080	1680	a	T6	Opt	10⅞x3x‡‡	P
	Kenworth																														
17	.....(D)...522	.....	187	245	43000	12900	10 00/20	11.00/22	Cum HB6	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	T U200P&††	.....	.....	.....	Tim FE900	Ws41A	1135	.....	.....	.....	.....	.....	9½x3¼x⅜	.....
18	.....(D)523.4R	.....	193	241	41000	14600	10.00/20	11.00/22	Cum HB6	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	TSW3012PA	WF	R	** –6.16	Tim FE900	Ws4rIA	924	1248	a	TD	102	9½x3¼x⅜	C
19	.....(D)524.4R	.....	193	241	54000	15100	10.00/20	11.00/22	Cum HB6	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	Tim SW456	WF	R	6.0 –7.6	Tim FE900	Ws4rIA	819	1192	a	TD	102	9½x3¼x⅜	C
20	.....(D)548.4R	.....	193	241	54000	17000	11.00/22	12.00/24	Cum HB6	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	Tim SDF460	DR	R	** –8.15	Tim FE900	Ws4rIA	819	1192	a	TD	109	9½x3¼x⅜	dbC
21	.....(D)552.4R	.....	255	255	54000	20700	13.00/24	13.00/24	Cum HB6	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	Tim SDF460	WF	R	** –8.15	Tim F3200W	Ws4rIA	1109	1192	a	TD	108	9½x3¼x⅜	dbC
22	(D).....584	.....	193	241	95000	24800	12.00/24	14.00/24	Cum HB6	6–4⅛x6	672	17	500	150–1800	7–4½x6½	Y	BL 7841	4	Tim SD472	WF	R	8.07–11.56	Shu 12	Ws1rIA	....	2235	a	TD	109	9½x3¼x⅜	dbC
23	(D).....825	.....	193	241	42000	14900	10.00/20	11.00/22	Cum HB6	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	T GSW458P	WF	..	6.0–7.6	Tim FE900	Ws4rIA	1016	....	a	TD	102	9½x3¼x⅜	C
24	829	.....	186	234	42000	14650	10.00/20	11.00/22	Bud LO525	6–4½x5½	525	5.5	385	150–2200	7–3x11¼	Y	Fu5A620	5	T SD3010P	DR	R	–8.27	Tim FE900	Ws4rIA	924	....	a	TD	104	9½x3¼x⅜	.....
25	(D).....888	.....	219	....	110000	29400	14.00/24	.....	Cum NHB6	6–5¼x6	743	17	575	200–2100	7–4½x6½	Y	BL 7841	4	Tim CDB79	WF	C	**–14.71	Shu 12	Ws4rIA	....	2447	a	TD	129	10¼x3½x1‡	dbC
	Marmon-Herr.																														
26	(C).....R5-6	.....	156	....	22500	▲6850	7.50/20D	7.50/20	Ford	8–3⅜x3¾	239	6.4	180	100–3800	3–2¼x4.71	N	Ford	4	Timken	S	H	** –6.67	Own M5	F–H	503	....	a	F	82▲	7½x3x¼	C
27	(C).....R6-6	.....	180	....	22500	▲7100	7.50/20D	7.50/20	Ford	8–3⅜x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Timken	S	H	** –6.67	Own M5	F–H	503	....	a	F	106¼	7½x3x¼	C
28	.....MH440-6	.....	182	....	34000	▲10600	9.00/20	10.00/20	Her WXLC3	6–4½x4¾	404	5.4	239	118–2800	7–2⅝x13¼	Y	Fu–MH31	5	Own 1123	2B	H	** –8.43	Own 121	Ws..A	876	....	C	F	96	9½x3x¼	T
29	.....MH-555-6	.....	182	....	42000	▲14900	11.00/20	11.00/20	Her RXC	6–4⅝x5¼	529	6.3	390	131–2200	7–3x13¼	Y	Fu–MH33	5	Own 1124	2B	H	** –8.15	Own 122	Ws..A	1092	1608	...	F	93	10▲x3x⅜	T
30	(C) ...R5-COE6	.....	156	180	22500	7350	7.50 /20D	7.50 /20	Ford	8–3▲x3¾	239	6.4	180	100–3800	3–2½x4. 71	N	Ford	4	Ford	S	H	6.67	Own	F...H	303	563	A	F	106.1	7.08x2.8x¼	T
31	(C).....Q-5-6	.....	160	....	35000	▲9550	9.00 /20	10.00 /20	Ford	8–3½x4⅜	337	6.4	255	145–3600	3–2⅞x5. 21	Y	Ford	5	Ford	....	H	** –6.80	Own	F...H	350	583	...	F	85	9x3x¼	T
32	(C).....Q-6-6	.....	184	....	35000	▲9700	9.00 /20	10.00 /20	Ford	8–3½x4⅜	337	6.4	255	145–3600	3–2⅞x5. 21	Y	Ford	5	Ford	....	H	** –6.80	Own	F...H	350	583	...	F	109	9x3x¼	T
33	.....Q-5L-6	.....	172	....	35000	▲9650	9.00 /20	10.00 /20	Ford	8–3½x4⅜	337	6.4	255	145–3600	3–2⅞x5. 21	Y	Ford	5	Ford	....	H	** –6.80	Own	F...H	350	583	...	F	.....	9x3x¼	T
34	.....Q-6L-6	.....	203	....	35000	▲9825	9.00 /20	10.00 /20	Ford	8–3½x4⅜	337	6.4	255	145–3600	3–2⅞x5. 21	Y	Ford	5	Ford	....	H	** –6.80	Own	F...H	350	583	...	F	.....	9x3x¼	T
	Oshkosh																														
35	.....W703-6X6	.....	Opt	Opt	47000	16950	11.00/20D	12.00/20	Her RXLD	6–4⅛x5¼	558	5.4	430	150–2200	7–3½x13¼	Y	Fu 5A650	12	Tim SD454W	2F	H	** –6.31	Own–Tim	LT61IHA	1080	1625	G	Opt	Opt	10½ 3½ ⅝ B	
36	(D)...W1600BD	.....	Opt	Opt	60000	22770	11.00/24D	12.00/24	Bu 6DC844	6–5¼x6½	844	...	600	180–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	** –6. 14	Own–Tim	LT6IA	1080	1625	G	Opt	Opt	12½–3½–⅝ B	
37	(D) °°W1600BDH	.....	Opt	Opt	60000	24300□	11.00/24D	12.00/24	Bu 6DC844	6–5¼x6½	844	...	600	180–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9. 82	Own–Tim	LT6IA	1080	1625	G	Opt	Opt	12½–3½–⅝ B	
38	(D)..°°W1602BDH	.....	Opt	Opt	950 '0	29300	14.00/24D	14.00/24	Bu 6DC844	6–5¼x6½	844	...	600	180–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD472	2F	H	** –13. 9	Own–Tim	LT6IA	....	2217	G	Opt	Opt	12½–3½–⅝ B	
39	.....W1600BG	.....	Opt	Opt	60000	22770	11.00/24D	12.00/24	Bu MO893	6–5⅝x6	893	...	625	200–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9. 82	Own–Tim	LT6IA	1080	1625	G	Opt	Opt	12½–3½–⅝ B	
40	(D)...W1600CD	.....	Opt	Opt	60000	23400□	11.00/24D	12.00/24	Cum HB600	6–4⅞x6	672	...	500	150–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –6. 14	Own–Tim	LT6IA	1080	1625	G	Opt	Opt	12½–3½–⅝ B	
41	(D)...W1600CDS	.....	Opt	Opt	60000	23700□	11.00/24D	12.00/24	Cum HBS600	6–4⅞x6	672	...	635	200–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9. 82	Own–Tim	LT6IA	1080	1625	G	Opt	Opt	12½–3½–⅝ B	
42	(D) .°°W1600CDH	.....	Opt	Opt	60000	24000□	11.00/24D	12.00/24	Cum HB600	6–4⅞x6	672	...	500	150–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9. 82	Own–Tim	LT6IA	1080	1625	G	Opt	Opt	12½–3½–⅝ B	
43	(D) °°W1600CDSH	.....	Opt	Opt	60000	24300□	11.00/24D	12.00/24	Cum HBS600	6–4⅞x6	672	...	635	200–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –6. 14	Own–Tim	LT6IA	1080	1625	G	Opt	Opt	12½–3½–⅝ B	
	Peterbilt																														
44	(D).....350	.....	193	Opt	42000	.....	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 8041	12	TimSW3012W	WF	R	6.00– 8.5	Tim FE900DPA	Ws6IA	1125	1569	...	TD	99½	10⅝x3½x⅜	CT
45	(D).....360	.....	198	Opt	54000	.....	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 8041	12	Tim SW456W	WF	R	6.00–10.2	Tim FE900DPA	Ws6IA	1005	1517	...	TD	104⅞	10⅝x3½x⅜	CT
46	(D).....370	.....	198	Opt	58000	.....	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 8041	12	Tim SW456W	WF	R	6.00–10.2	T 27463	Ws6IA	1084	1626	...	TD	104⅞	10⅝x3½x⅜	CT
47	(D).....380	.....	194	Opt	58000	.....	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 8041	12	Tim SD462W	2F	R	** –8.07	T 27463	Ws6IA	1084	1626	...	TD	98½	10⅝x3½x⅜	CT
48	(D).....390	.....	197	Opt	79000	.....	12.00/24	14.00/24	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 8041	12	Tim SD472W	2F	R	** –8.07	T 27463	Ws6IA	1622	2215	...	TD	103½	10½x3½x⅜	CT
49	Reo.....E-216	.....	150	203	28000	9615▲	8.25/20	9.00/20	Own 292	6–3 7/16x4½	292	6.5	...	124–3300	7–2½x9. 408	Y	Cla 205V	5	Tim SBD1055	SF	T	5.28–7.4	Tim 32500	LT6IVH	500	842	var	TX	85⅝	9¼x3 ⅞x ⅛	TfP
50	.....E-226	.....	150	203	34000	10250▲	9.00/20	10.00/20	Own 331	6–4½x4½	331	6.4	...	140–3200	7–2½x9. 408	Y	Cla 205V	5	Tim SBD1555	SF	T	5.57–7.8	Tim 32500	LT6IVH	560	944	var	TX	85⅝	9¼x3 ⅞x ⅛	TfP
51	.....E-236	.....	169	200	42000	12980▲	10.00/20	11.00/20	Con T6427	6–4⅛x4⅞	427	...	...	...	7–2½x13. 6	Y	Cla 270V	5	Tim SD3010	SFd	T	7.5 –8.27	Tim 36000	TWs6IA	1082	1570	var	TD	104⅛	9¼x3 ⅞x ⅛	TfB
52	306	.....	214	214	45000	14500▲	10.00/20	11.00/20	Con R6513	6–4½x5⅜	513	5.7	392	167–2600	7–3¼x14. 7	Y	Spl 6252A	5	Tim SD3010	SFd	T	7.5 –8.27	Tim 36000	TWs6IA	1082	1570	var	TD	136½	10½x3½x⅜	Tf
53	316	.....	186	248	55000	16000▲	10.00/20	11.00/22	Con R6602	6–4⅞x5⅜	602	5.7	456	194–2600	7–3¼x14. 7	Y	Spl 6253	5	Tim SD454	SFd	T	7.33–10.27	Tim 36000	TWs6IA	1230	1778	var	TD	108½	10½x3½x⅜	TfB
	Sterling																														
54	.....HBS130	.....	164	183	32000	11000	8.25/20	10.00/20	Wau 6MZA	6–4½x4½	404	5.6	290	130–3000	7–2⅝x12½	Y	Fu 5A43	5	T-SBD1555DPH	SF	L	6.80–13.14	T-35011H	T6IHV	664	1134	A	TX	83	9x3 ¼x ⅛	A
55	.....HDS140	.....	164	183	36000	11800	9.00/20	10.00/20	Wau 6MZA	6–4¼x4¾	404	5.6	290	130–3000	7–2⅝x12½	Y	Fu 5A43	5	T-SD3010PA	2F	L	6.84–10.22	T-35011TW	Ws6IA	1074	1554	A	TX	83	9x3 ¼x ⅛	A
56	.....HWS160	.....	164	183	42000	12800	10.00/20	11.00/22●	Wau 6SRKR	6–4½x5⅛	517	5.5	368	125–2250	7–3x13¼	Y	Fu 5A62	5	T-SW3010PA	WF	L	5.40–8.50	T-36000TW	Ws6IA	1052	1574	A	TX	83	9x3 ¼x ⅛	A

▲ Includes Cab.
‡‡ Overdrive optional.

(Turn to Page 120, Please)

● Complete vehicle with pick-up type body.
†† Timken T13126 PA Trailing Axle.
▼ Auxiliary transmission Spicer 703F with 3 forward speeds.
• Auxiliary transmission Spicer 6231B at extra cost gives 15 forward speeds

‡ Three speed transmission—2 speed transfer case.
△ Torque divider, Timken T70–2 speed.
°° Hydraulic Coupling.

□ Chassis weights on duals Front, Center and Rear.
▼▼—Lockheed type front and Timken dual primary rear brakes.
● When 11.00/22 tires are required it is necessary to furnish 52 inch axle spacing.

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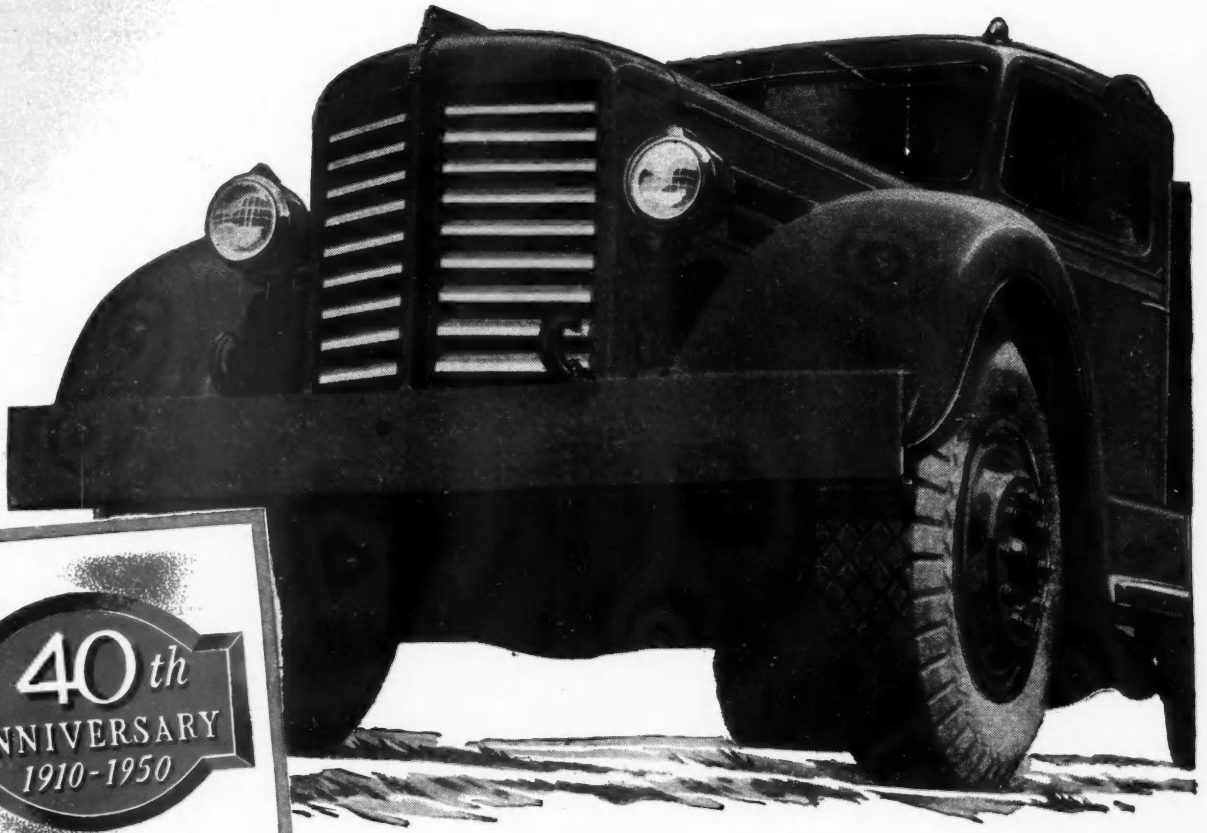

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G. H. Hammond,
President

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Since 1910

‡ Overdrive optional. (Turn to Page 120, Please)

‡‡ Timken T1312B PTO. Trailing Axle type body.
‡‡ Auxiliary transmission Spicer 703F with 3 forward speeds.
• Auxiliary transmission Spicer 6231B at extra cost gives 15 forward speeds

‡ Three speed transmission—2 speed transfer case.
‡‡ Torque divider, Timken 170–2 speed.
•• Hydraulic Coupling.

‡‡ Chassis weights on units Front, Center and Rear.
• Lockheed type front and Timken dual primary rear brakes.
• When 11.00/22 tires are required it is necessary to furnish 62 inch axle spacing.

(Continued from Page 118)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES Standard Front and Rear	TIRE SIZES D-dual rear S-single rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	ENGINE DETAILS No. of Cylinders, Bore and Stroke	ENGINE DETAILS Displacement	ENGINE DETAILS Comp. Ratio	ENGINE DETAILS Torque lb. ft.	ENGINE DETAILS Max. Brake H.P. at R.P.M. Given	ENGINE DETAILS Main Bearings Number	ENGINE DETAILS Main Bearings Diameter and Length	Governor Standard	TRANSMISSION Make and Model	TRANSMISSION Forward Speeds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
	Sterling Con't.																																
1	HW9235		182	193	52000	15700	11.00/20		11.00/24	Wau 145GK	6-5½x6	7796	6.5	258	186–2100	7	3½x17¾	YFu	4B86	4	4T-8W456P	WF	L5	6.67–8.20	T-27454W	W861A	1308	1892	A	TX	92	9¼x3½x¾	A
2	HW9160H		182	193	42000	14250	10.00/20		11.00/22	Cum HB600	6-4½x6	6721	7.5	200	150–1800	7	4½x16½	YFu	4B86	4	4T-8W3012PA	WF	L4	7.17–6.66	T-36000TW	W861A	1082	1574	A	TX	92	9¼x3¼x¾	A
(D) 3	HW9235H		182	193	52000	16000	11.00/20		11.00/24	Cum HB600	6-4½x6	6721	7.5	200	150–1800	7	4½x16½	YFu	4B86	4	4T-8W456P	WF	L5	6.66–7.31	T-36000TW	W861A	1308	1892	A	TX	92	9¼x3½x¾	A
(D) 4	HW9235H		182	193	52000	16000	11.00/20		11.00/24	Cum HB600	6-4½x6	6721	7.5	200	150–1800	7	4½x16½	YFu	4B86	4	4T-8W456P	WF	L5	6.66–7.31	T-36000TW	W861A	1308	1892	A	TX	92	9¼x3½x¾	A
5	HC8195		170	180	48000	15300	10.00/20		11.00/22	Wau 140GK	6-4½x5½	5256	6.0	142	120–2200	7	3¼x13¾	YFu	5A02–3A92	15	Own 195W	CD	R6	.04–7.31	T-36000TW	W861A	1080	1802	A	TX	83	9¼x3½x¾	A
6	HC8265		182	193	60000	17750	11.00/20		12.00/24	Wau 145GK	6-5½x6	7796	6.5	258	186–2100	7	3½x17¾	YFu	4B86	12	Own 286W	CD	R9.21–13.16		T-27454W	W861A	1080	1912	A	JX	92	9¼x3½x¾	AL
7	HC8297		182	193	70000	20750	12.00/24‡		13.00/24	Wau 145GK	6-5½x6	7796	6.5	258	186–2100	7	3½x17¾	YFu	4B86‡	12	Own 330W	CD	R9.21–13.16		T-27454W	W861A	1280	1988	A	JX	91	12x3½x¾	AL
8	HC8330		174	187	80000	23150	12.00/24		14.00/24	Wau 145GK	6-5½x6	7796	6.5	258	186–2100	7	3½x17¾	YFu	4B86–3A92	12	Own 195W	CD	R6.04–7.31		T-36000TW	W861A	1082	1802	A	TX	92	9¼x3½x¾	A
(D) 9	HC8195H		182	193	60000	17000	10.00/20		11.00/22	Cum HBD600	6-4½x6	6721	7.5	200	150–1800	7	4½x16½	YFu	4B86‡	12	Own 265W	CD	R9.21–13.16		T-27454W	W861A	1160	1912	A	JX	92	9¼x3½x¾	AL
(D) 10	HC8265H		182	193	66000	18000	11.00/20		11.00/24	Cum HBD600	6-4½x6	6721	7.5	200	150–1800	7	4½x16½	YFu	4B86‡	12	Own 330W	CD	R9.21–13.16		T-27454W	W861A	1280	1988	A	JX	92	9¼x3½x¾	AL
(D) 11	HC8297H		182	193	70000	21050	12.00/24‡		13.00/24‡	Cum HBD600	6-4½x6	6721	7.5	200	150–1800	7	4½x16½	YFu	4B86‡	12	Own 330W	CD	R9.21–13.16		T-27454W	W861A	1280	1988	A	JX	91	12x3½x¾	AL
	HC8330H		174	187	80000	23450	12.00/24		14.00/24	Cum HBD600	6-4½x6	6721	7.5	200	150–1800	7	4½x16½	YFu	4B86‡	12	Own 330W	CD	R9.21–13.16		T-27454W	W861A							
	Trucksteel																																
12	(C) F2X28 2F		156	237	28000	6468	7.50/20‡		8.25/20–10	Ford	8–3½x3¾	2396	8.1	80	100–3800	3–2	49x4.9	N	Ford	4	Ford■	SF	H5	5.83–8.11	Ford	F61HV	502	835	●	TX	82½	8x2.8x.46	
13	(C) F2X29-0(coe) 2F		134	224	28500	7053	7.50/20‡		8.25/20–10	Ford	8–3½x3¾	2396	8.1	80	100–3800	3–2	49x4.9	N	Ford	4	Ford■	SF	H5	5.83–8.11	Ford	F61HV	502	835	●	TX	82½	8x2.8x.46	
14	(C) F2X28-7 2F		156	250	28000	7897	7.50/20‡		8.25/20–10	Ford	8–3½x4¼	3376	4.2	155	145–3600	3–2	8.75x5.0	Y	Ford	5	Ford■	HyF	H6	8.8	Ford	F61HV	560	935	●	TX	82½	9¼x3¾x½	
15	(C) F2X34-7 2F		156	250	34000	8100	8.25/20‡		9.00/20–10	Ford	8–3½x4¼	3376	4.2	155	145–3600	3–2	8.75x5.0	Y	Ford	5	Ford■	HyF	H6	8.8	Ford	F61HV	560	935	●	TX	82½	9¼x3¾x½	
16	(C) F2X34-8 2F		156	250	34000	8704	9.00/20		9.00/20–10	Ford	8–3½x4¼	3376	4.2	155	145–3600	3–2	8.75x5.0	Y	Ford	5	Ford■	SF	H6	5.5	8.87	Ford	F61HV	695	1091	■■	TX	83½	9¼x3¾x½	
17	(C) F2X40 2F		156	250	40000	9309	9.00/20‡		10.0/20–10	Ford	8–3½x4¼	3376	4.2	155	145–3600	3–2	8.75x5.0	Y	Ford	5	Ford■	SF	H6	5.17	8.87	Ford	C61HV	830	1091	■■	21	83½	9¼x3¾x½	
18	(C) C2X28 2F		157	247	28000	6629	7.50/20D		9.00/20–10	Chev.	6–3½x3¾	2356	6.0	192	93–3100	4	3.124x9	Y	Chev.	4	Chev.▷	HyF	H6	6.17		Chev.	C61HV	530	808	●	21	82¼	9¼x3¾x½	
19	(C) C2X29-0(coe) 2F		130	224	29000	7204	7.50/20D		9.00/20–10	Chev.	6–3½x3¾	2356	6.0	192	93–3100	4	Std. Chev.	Y	Chev.	4	Chev.▷	HyF	H6	6.17		Chev.	C61HV	530	808	●	21	82¼	9¼x3¾x½	
20	(C) F4X26 4R		144	209	26000	7300	7.50/20		8.25/20*	Ford	8–3½x3¾	2396	8.1	80	100–3800	3–2	4.924.9	N	Ford	8	Ford	SF	R	●●●	7.2	Ford	F61HV	498	836	Co	TX	71	8x3x.46	
21	(C) F4X27 (coe) 4R		140	205	27000	7665	7.50/20		8.25/20–10	Ford	8–3½x3¾	2396	8.1	80	100–3800	3–2	4.924.9	N	Ford‡‡	12	Ford	HyF	R	●●●	7.2	Ford	F61HV	498	836	Co	TX	64	8x3x.46	
22	F4X30 4R		156	185	30000	8200	7.50/20		8.25/20–10	Ford	8–3½x3¾	2396	8.1	80	100–3800	3–2	4.924.9	N	Ford‡‡	12	Ford	HyF	R	●●●	7.2	Ford	F61HV	498	836	Co	TX	71	8x3x.46	
23	F4X34 4R		156	228	34000	10000	8.25/20		9.00/20*	Ford	8–3½x4¼	3376	4.2	155	145–3600	3–2	8.75x5.0	Y	Ford‡‡	15	Ford	HyF	R	●●●	7.8	Ford	F61HV	745	1169	Co	TX	82	9¼x3¾x½	
24	(C) F4X34 4R		156	228	34000	10650	9.00/20		10.00/20*	Ford	8–3½x4¼	3376	4.2	155	145–3600	3–2	8.75x5.0	Y	Ford‡‡	15	Ford	HyF	R	●●●	7.16	Ford	F61HV	825	1231	C	TX	82	9¼x3¾x½	
25	(C) F4X38 4R		156	228	38000	10650	9.00/20		10.00/20*	Ford	8–3½x4¼	3376	4.2	155	145–3600	3–2	8.75x5.0	Y	Ford‡‡	15	Ford	HyF	R	●●●	7.16	Ford	F61HV	825	1231	C	TX	82	9¼x3¾x½	
26	(C) C4X28 4R		151	217	28000	7500	7.50/20		8.25/20*	Chev.	6–3½x3¾	2356	6.0	192	93–3100	4	8t. Chev.	Y	Chev.‡‡	8	Chev.	HyF	R	●●●	6.17	Chev.	C61HV	506	780	Co	21	68	9¼x3¾x½	
27	(C) C4X29 (coe) 4R		125	192	29000	7865	7.50/20		8.25/20*	Chev.	6–3½x3¾	2356	6.0	192	93–3100	4	8t. Chev.	Y	Chev.‡‡	8	Chev.	HyF	R	●●●	6.17	Chev.	C61HV	506	780	Co	21	69	9¼x3¾x½	
28	C1X29		151	217	29000	8040	7.50/20		8.25/20–10	Chev.	6–3½x3¾	2356	6.0	192	93–3100	4	8t. Chev.	Y	Chev.‡‡	12	Chev.	HyF	R	●●	6.17	Chev.	C61HV	506	780	Co	21	68	9¼x3¾x½	
29	C4X30		125	192	30000	8400	7.50/20		8.25/20–10	Chev.	6–3½x3¾	2356	6.0	192	93–3100	4	8t. Chev.	Y	Chev.‡‡	12	Chev.	HyF	R	●●	6.17	Chev.	C61HV	506	780	Co	21	69	9¼x3¾x½	

▲ Includes Cab.
● Front only; Rear 8.25/20.
■ Front only; Rear 11.00/24.
▲ Auxiliary transmission, Spicer 8031.
■ Two speed axle with vacuum shift.
◆ Rear only; Front 12.00/24.
† Front only; Rear 9.00/20.
‡‡ Front only; Rear 10.00/20.
‡‡ With Baumis auxiliary transmission.
▼ Two speed axle available—6.13–8.10.
Including slip-over reinforcing frame channels.
†† With Baumis power divider.
* Composite Cast Alloy Iron.
C Cast Alloy Iron.
§ Single front dual rear.

PRIVATE TRUCK OWNERS
Review Year's Activities

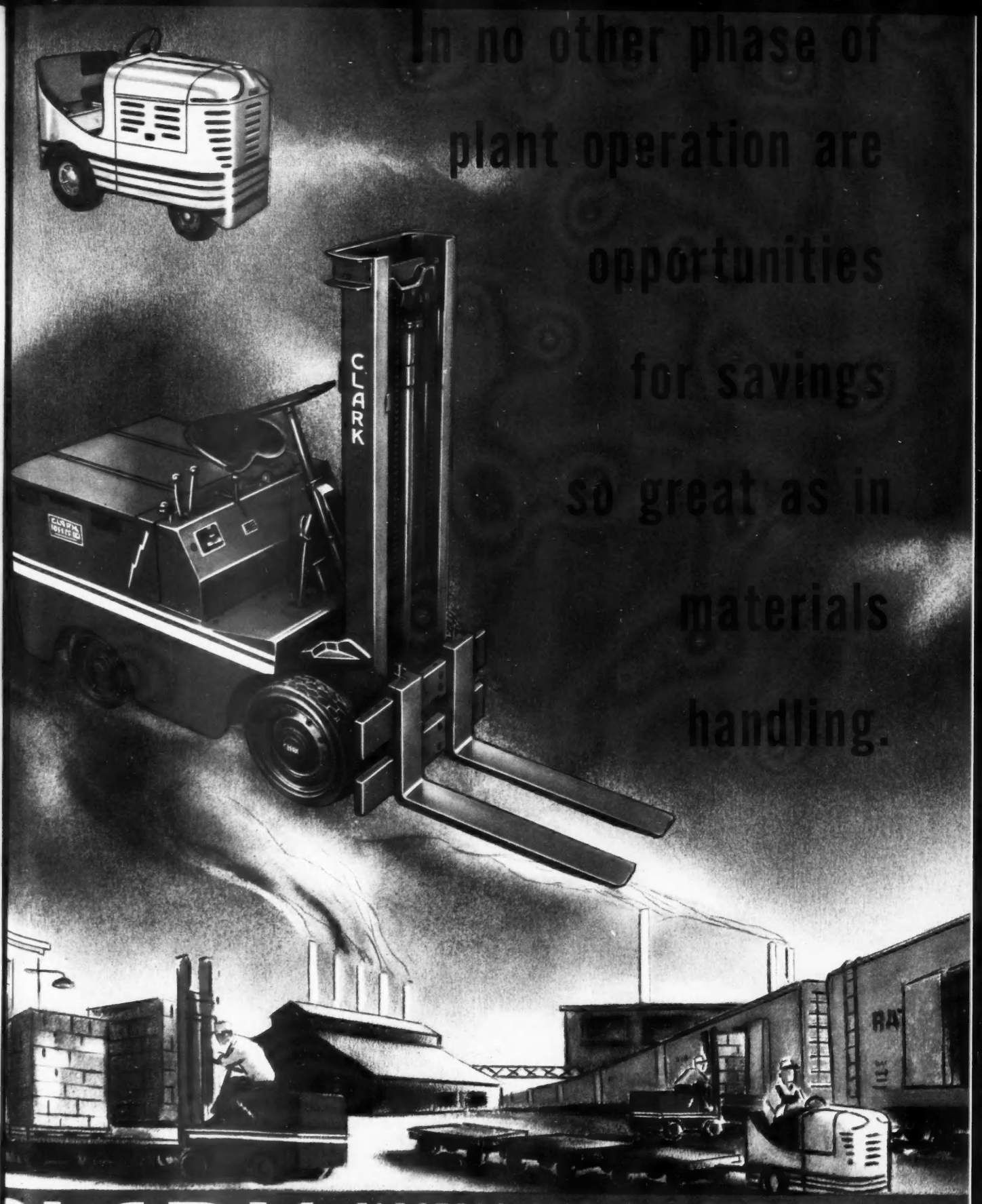
THREE familiar topics cropped up at the Eleventh Annual Meeting of the National Council of Private Truck Owners, in New York, January 26 and 27. Legislation, public relations and the improved status of private carriers (as clarified by the recent Lenoir Chair and Schenley decisions) held the attention of a goodly crowd of truck owners, manufacturers and guests for the eventful two days.

Highlight of the opening sessions was a 5000-volt shock initiated by guest speaker, the Hon. Ralph W. Guinn, House of Representatives, in a high-amperage speech on the threat of American socialism. "You know as well as I do that socialism is *not* on the way. It is here," he said. "When the government takes 25 per cent or more of the earnings of our people, it has far the largest share of our resources. It does not need to take the rest because with 25 per cent it is strong enough to dominate the whole of our economic life!"

By promising everybody more than they can earn by their own efforts, the speaker continued, the government is consuming our fat—using up the reserves we have been saving since this country was started. The government has siphoned the capital out of our farms and our business, and we can't take out for depreciation the money we actually need to rebuild them. This slow suction of our capital from private firms and agencies is done without a sound. There is no warning signal, but each year's attrition is added to that of the year before. All we can do in Congress is warn you. Whenever the independent people of this country want to end this drift toward bankrupt European socialism, they can end it—by going to work on their own congressional districts to defeat the members of Congress who have voted for socialism. Our only hope is to get to the grass roots—in the districts of the voters.

In a report on highway policies L. F. Orr, of Pet Milk Co., warned that gross overloading is causing unnecessary wide spread failure of the highways, but more important, inadequate highway construction with unsuitable materials, inadequate drainage and poor maintenance has largely contributed to faulty roads. Highway users and builders should quit offering "fatigue" as an excuse for highway failure, he said, when in reality it is an admission of faulty design of the use of improper material inadequately prepared and inadequately pro-

(PLEASE TURN TO PAGE 208)



CLARK

ELECTRIC AND GAS POWERED

FORK-LIFT TRUCKS

AND INDUSTRIAL TOWING TRACTORS

CLARK EQUIPMENT COMPANY, Buchanan, Michigan

Other Plants: BATTLE CREEK, JACKSON, BERRIEN SPRINGS, MICHIGAN

SEE HOW→

Easy does it . . .

AND VASTLY BETTER At Socony-Vacuum

Speed with Safety is the rigid rule in this complete, integrated lubricant plant of the Socony-Vacuum Oil Company, with its storage capacity of more than a million gallons—and substantial benefits are the inevitable by-product. Oils and greases are blended and compounded in huge mixing kettles under direction of a modern control laboratory, and are piped directly into containers ranging from 55-gallon drums to one-quart cans, which travel on conveyors. Cases are filled and sealed automatically.

At the end of the conveyor lines, both drums and cases are palletized and Clark fork trucks take charge—a Carloader* inside, a Yardlift-40* outdoors. For the most part, manual methods have gone the way of practically all outmoded practices.

Benefits of Clark mechanization were immediate: increased warehouse capacity through use of air rights and efficient orderliness; increased productive capacity resulting from quickened flow and faster turnover of material; and a sharp reduction in accidents and damage losses.

In addition to their routine handling duties, the Clarks are highly regarded as versatile "utility men" for maintenance work and other lifting-and-carrying chores.

WRITE FOR MATERIAL HANDLING NEWS. It gives you "hot news" about how others everywhere are increasing production, decreasing costs. Packed with factual reports, fully illustrated. A request on your business letterhead puts you on our complimentary circulation list.

55-gallon drums and barrels are stored in the yard—in twos horizontally on a cradle pallet, or in fours vertically on a conventional pallet. Barrel racks for stacking, and heavy, hazardous lifting are things of the past.

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS AND INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIV., CLARK EQUIPMENT COMPANY BATTLE CREEK 66, MICH.
REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE WORLD
AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

PRODUCTS OF CLARK — TRANSMISSIONS FORK TRUCKS & TRACTORS AXLE HOUSINGS
GEARS AND FORGINGS RAILWAY CAR TRUCKS ELECTRIC STEEL CASTINGS
FRONT AND REAR AXLES FOR TRUCKS AND BUSSES METAL SPOKE WHEELS TRACTOR UNITS

*Trademark Registered

Centralized Maintenance Control

Continued from Page 71

mileage and remarks. Police cars and vehicles stored at yards or elsewhere are called in every two weeks for washing. From maintenance and lubrication records, and the general condition of the vehicle, the Bureau can tell what is needed.

Rental Rate Structure

AN IDEA of our rental rate structure can be obtained from Fig. 1. These rates are refigured each year. They must not be compared with private trucking figures, because they are so set that the Bureau breaks even at the end of the year.

Some items, such as depreciation and insurance, are not included. Liability and property damage insurance is not included, because the central purchasing department buys it for all vehicles, including the fire department, on a contract basis.

The "why," of not charging depreciation is complicated by many factors, and there are many at the City Hall who do not approve of this system. At present, in cooperation with the Comptroller's office, we are attempting to work out a new system of rates which will include depreciation.

PM Procedures

OUR preventive program is thorough but not complicated. Intelligent and experienced judgment is used rather than routine. There is a mimeographed form for each vehicle. It lists everything that regularly needs adjusting or repairing. Every time anything is done, the mileage is noted and a check placed in the proper column, as shown in Fig. 5. In this way, a record is available of the mileage, mechanic number, and a complete history of what was done.

When a car comes in for inspection, it is always checked for lights, horn, windshield wiper without notation. The mechanic gets out the 8½ x 11-in. looseleaf notebook with the history of that car. He then gets out a 4¾ x 10-in. blank inspection card, Fig. 6, and lists the mileage at which last work has been done on all things which need to be serviced. At the top, he lists present mileage, his number, and number of the vehicle. When he gets done, he can tell at a glance how many miles have been on the vehicle since each part was serviced last.

From experience, our maintenance men know how long certain parts should last before giving trouble. Thus, police car 77 came in for inspection at 44,511 miles. The inspection card showed brakes had been adjusted at 30,770 so they were adjusted again because they had almost 14,000 miles on them. The clutch had been looked at at 41,342 miles, so nothing needed to be done. New plugs had been installed at 42,189 and the compression of each cylinder was marked at the top of the inspection card.

Another form, Fig. 7, is made out and sent to the police department so they know what has been done to the car. When the check has been completed, the information from the inspection card is posted into the loose-leaf notebook containing the mimeographed "history" forms.

Thus the thoroughness of the inspection varies with the number of miles, its age, kind of service, kind of driver. A new car may get, say, a visual type of inspection, while an "ancient" might an instrument inspection with a

(TURN TO PAGE 124, PLEASE)

UNITED
90% COVERAGE—
BY THIS ONE UNITED BRAKE ASSORTMENT!
Keep a United Assortment handy and you'll have every brake part needed for 90% of the cars that drive in! This HA-488 assortment, for instance, contains 20 master kits (14 types), 100 wheel parts (15 types), and 90 "C" washers (9 types). All of them packaged or sorted for quick identification and kept fully protected in a good looking, all metal cabinet. Much better and faster than hunting for parts around the shop or waiting for them to be delivered! Ask your NAPA Jobber about this and the 16 other United Assortments today! United Parts Mfg. Co., 1250 W. Van Buren St., Chicago 7.
HYDRAULIC BRAKE PARTS • BRAKE CABLES
UNITED
SPEEDOMETER CABLES • FUEL PUMP PARTS

Maintenance Control

Continued from Page 123

thorough dismantling of some of the component parts. Squad cars with slow speeds and many stops need a different inspection than those operating at steady, fairly high speeds. Cars reserved for officials who do not drive much, often develop squeaks before their regular lubrication time. If they have, say, 700 miles, they are greased before their regular time, or else the squeaks are eliminated.

Truck drivers working for the Bureau fill out the form shown in Fig. 8, which contains a list of such items as foot brakes, starter, steering and so on. If anything is wrong, they indicate after the name of the part that it is not working properly. The truck driver keeps a duplicate for his own protection. Thus, if the brakes aren't holding, he is responsible for reporting their condition.

In addition, the trucks get the regular 5000-mile inspections, as provided under the PM plan. The night men are responsible for having the parts repaired or adjusted or the truck removed from service.

5000-Mile Inspection Items

ON THE 5000-mile inspections, brake linings are looked at to prevent drums from being scored by rivets. We often find it necessary to replace two sets of front linings for one rear.

Spark plugs are replaced when it looks as though they would not last until the next inspection. These are purchased, like every city item, on the basis of quality, service and price.

Extra distributors are kept on hand, and points are never installed with the distributor in place. These are always put in on the bench so the points can be set properly with instruments. If points need replacing another distributor is installed.

Even if batteries appear all right, they are given a bench break-down test of 200 amp. This catches the weak ones, and saves road service calls. Corroded cables and battery holders can be cleaned and painted. We placed all squad car batteries in the rear trunk away from the heat and found an appreciably longer life.

Tire wear is noticed to determine whether the front axle needs realigning.

Slow speed squad cars tend to have trouble with carburetors gumming. On inspection, the manifold vacuum is checked and, if not correct, the carburetor is exchanged rather than adjusted on the vehicle.

For police and business cars at Market Street garage a pint of additive is added to the crankcase and another pint added through the spark plug holes at the 5000-mile inspection. Since doing this, during the past two years, they haven't had any sticky valves.

Heavy-duty detergent oil and heavy-duty oil filters are used. Formerly, we used to change oil every 1000 miles, but found it was not necessary. As

(TURN TO PAGE 126, PLEASE)

IT'S THE EXTRA SPRING THAT COUNTS
TRAINOR
TRAINOR is the extra spring that counts when you want to increase pay load capacity and efficiency. TRAINOR is the extra spring that reduces road shock and side sway, cutting cost per mile.
TRAINOR Helper Springs feature steel brackets, virtually eliminating breaking hazard. Spring surfaces are free of irregularities.
To operate your fleet more efficiently and economically, install TRAINOR Helper Springs and Build-Up Kits . . . at leading automotive wholesalers everywhere.
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WRITE FOR FOLDER GIVING NEW PRICE STRUCTURE
TRAINOR NATIONAL SPRING COMPANY
NEWCASTLE, INDIANA

"Dad, can I have the truck tonight?"

Still Another Operator Finds

The Scale Tells the Tale

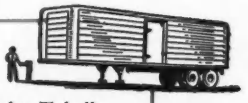
Payloads HIGHER . . . Power Costs LOWER with BROWN Lightweight Aluminum Trailers

"WE HAVE a double-barrel reason for preferring Brown Lightweight Aluminum Trailers," says Tennessee Carolina Transportation Company. "Browns pay us a bonus in bigger payloads. Browns pays us a bonus because of easier pulling. The power cost for a tractor pulling Browns is lower than for the same tractor hauling other trailers over the same route."

Heavy trailers that penalize you with pounds and pounds of dead weight are — the hand in your pocket. They are a blight on profits.

Brown Lightweight Aluminum Trailers cut trailer weight to a minimum, put the weight in pay-freight. Engineered, too, for easy pulling and years of low-cost operation. Browns are outstripping the field in sales. There's a reason — *profits* for operators. Let an independent Brown distributor analyze your fleet and show you the path to greater profits. Browns are your best buy.

The Scale Tells the Tale



Brown stands on its slogan — "The Scale Tells the Tale." Yes — put a Brown on the scale — compare its light weight with any other trailer. Let the Scale Tell the Tale. You be the judge and jury, too. We'll stand on what the scale reads — compare that with mere claims.

Brown ALUMINUM TRAILERS

BROWN TRAILERS, INC.
Toledo, Ohio • Spokane, Wash.
Distributors in all principal cities

Maintenance Control

Continued from Page 124

experienced men check the oil, it is changed when it becomes very dirty or gives other evidences of deterioration.

On police cars a high-quality E.P. oil is used in the transmissions and rear ends, and never changed. This oil is more expensive to start with but its continuous use saves purchasing change oil and, also, the labor of draining, flushing and handling of the new and old oil. This is experimental. We want to determine accurately the long time effect before adopting it for all cars. On other newer models it gets changed at 10,000 miles, and old cars twice a year.

Clutch trouble has been minimized by continuously insisting that there must be the proper clutch pedal lash for all cars. Lubrication men, helpers, tire men, squad car policemen all know about it and report cars needing adjustment.

The truck drivers employed by the Bureau are responsible for seeing to it that their trucks have both gas and engine oil. Business cars used by officials and technicians have the oil level checked by the gas pump attendant each time gas is put in.

All oil, alcohol, and gas supplied is recorded on the form shown in Fig. 9, which is kept at every gas pump. The car number, and speedometer reading also is recorded. These forms then go to the tabulating division, which furnishes us with a monthly report showing quantities used by each car. These tabulated reports then are posted on the form shown in Fig. 11, which is made out for each car. The posting clerk can question excessive use of oil or gas, if garage attendants miss.

Lubrication is taken care of similarly to the preventive maintenance work. The need for greasing is noted from the same type of records that the preventive maintenance men use. The lubrication man has 6 x 10-in. cards, as shown in Fig. 10; one for every vehicle he takes care of. These have columns for grease, motor oil, transmission, differential, and so on. The grease man's number, the date and the speedometer reading are recorded each time. These are kept in a box next to the hoist. As mentioned, engine oil is not changed every 1000 as indicated on the form.

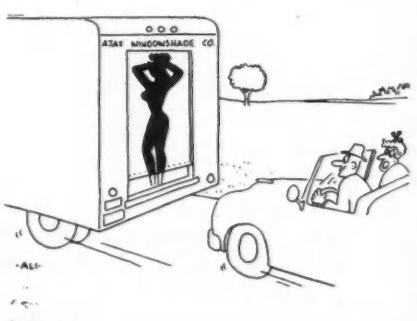
For heavy-duty equipment, the PM procedure is much the same, except that the "big ones" have more parts such as air brakes, four-wheel drives, and so on. The forms are similar but have more items.

For rollers, air compressors, the same technique is used but, as there aren't as many of these, typewritten forms are made out from time to time. In every case, an inspection card is written up transcribing the mileage of the last adjustments.

(Repair methods, the handling of road calls, tire maintenance and other general maintenance practices employed by the City of Milwaukee will be outlined in the March issue.—ED)

END

(Please resume your reading on P. 72)



"Let's pass this truck, or we'll never get where we're going."

Factory Installed

In These Trucks: International • GMC Diamond T • Peterbuilt • Dart Federal • Walter • Oshkosh • Duplex Ward La France • Coleman • Reo Hendrickson • Sterling Available • FWD

At "factory installed" prices you get this Bostrom Hydraulic Seat, the ultimate in truck seating, at lowest cost.

BOSTROM

HYDRAULIC shock absorber and suspension mechanism of the Bostrom seat soak up jolts and jars. Steel frame and bonded rubber pad last the life of the truck. Mechanism moves in rubber — requires no oiling. Fore and aft adjuster accomodates all drivers. Seat coverings are replaced in 10 minutes — eliminating upholstery jobs.

For truck part numbers consult your truck dealer or write:

BOSTROM MFG. CO.

Milwaukee 4, Wisconsin

Costs a little more at the start... costs a lot less in the long run.

TURN **MORE** DEAD WEIGHT INTO PAYING FREIGHT WITH—

MAGNESIUM

25 more cases per load

when this brewery switched to magnesium truck bodies!

A large mid-western brewery found that by purchasing magnesium truck bodies from a local body builder, it could increase each truck's payload by approximately 25 cases without exceeding gross weight limitations.

This is just one of many examples that demonstrate how light, strong magnesium turns dead weight into paying freight. Because magnesium is the lightest structural metal—a full ⅓ lighter than any other—it makes possible the maximum reduction in dead weight.

Even if your loads are not governed by gross weight restrictions, you'll find magnesium truck bodies profitable. The extra lightness obtainable with magnesium is immediately reflected in better gas mileage. Wear on tires, brakes, and clutches is reduced and license fees are usually lower. Operating profits go up.

For more information about magnesium truck bodies, or the names of body shops in your vicinity, call the nearest Dow sales office, or write direct.

Magnesium Division

THE DOW CHEMICAL COMPANY

MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Atlanta
Cleveland • Detroit • Chicago • St. Louis • Houston
San Francisco • Los Angeles • Seattle
Dow Chemical of Canada, Limited, Toronto, Canada

The Lightest Truck Bodies Are Made of Magnesium

Britain's "Nationalized" Trucks

Continued from Page 88

The railroad nationalization was comparatively simple, merely the centralization and purchase of only four large railway companies. Those companies already were experienced in joint working on many matters, both from wartime control by the government and from their own central body known as the Railway Clearing House. No new buildings were required nor was much change in the administrative organization needed.

In complete contrast, the Road Haulage Executive started completely from scratch. Every member of staff from the chief secretary to the junior typist and from the operating director to the office boy, had to be found, appointed, and then welded into a working machine. The whole administrative and financial routine had to be slowly evolved. Office accommodation, both for headquarters and for the divisions throughout the country, had to be sought out, leases fixed up, and then furnished with the necessary equipment.

$100,000,000 "Down Payment"

BEFORE nationalization, there were a few large trucking concerns in Britain. Most of these were not single companies, but loose federations of several smaller companies. The Executive early realized that if it could attract some of these into its fold quickly, that would provide the nucleus, or framework, around which the whole administrative and operating organization could be constructed. As those companies could not resist nationalization, as they fell within the formula for acquisition, it was only a question of whether it was more advantageous to them to sell out immediately on a voluntary basis, or a few months later under compulsion. The Executive was able to attract a number of these voluntary acquisitions, which really set it off as a going concern. Total cost of these voluntary acquisitions approached $100,000,000.

After that, the Executive was in a position to operate the machinery of the Act of Parliament, and to begin issuing the notices of compulsory acquisition. Firms liable to be thus acquired were those whose traffic in 1946 consisted of more than 50 per cent long distance, whether measured by the weight of traffic or haulage receipts.

It can be estimated that more than 2000 notices of acquisition have now been issued. Each one involves separate negotiations in regard to the amount of compensation to be paid. Much dissatisfaction has been voiced because of the long delays before any "provisional" amount of compensation is agreed by the Executive. By an unfortunate blemish in the Act, no doubt due to the haste with which it was propelled through Parliament, the Executive cannot pay any compensation money at all until this "provisional" assessment has been agreed. Many firms who were acquired several months ago still have not received any payment in respect of their compulsory acquisition; although it must be admitted that, in some cases, the firms themselves have delayed in sending in their own past trading accounts.

When the formulas for the calculation of compensation, as provided by the Act have to be applied individually to more than 2000 separate acquisitions

(TURN TO PAGE 130, PLEASE)

OUT OUR WAY
OWOOH! FOR NINE YEARS HE'S BEEN STANDIN' ON SOL-SPEEDI-DRI AN' HE DON'T KNOW WHAT IT'S FOR!
BECAUSE IT'S NONE OF MY BUSINESS! THEY GOT MEN DOIN' THAT!
WHY IS IT SOME PEOPLE HAVE GOTTA BREAK A LEG OR ARM OR SUMPIN' BEFORE THEY BOTHER TO FIND OUT ABOUT SOL-SPEEDI-DRI?
THE HERMIT
T.R.WILLIAMS
Promote Safety, Speed Up Work
BY USING
SOL·SPEEDI·DRI
Spread Sol-Speedi-Dri on the floor. It soaks up all liquids—oil and grease included. Floors are safe for working, safe for walking...and safe working conditions help speed jobs through. Sol-Speedi-Dri cuts floor-cleaning costs and helps reduce fire hazards, too. Clip the coupon, send it today ...see for yourself what an important job Sol-Speedi-Dri can do for you!
Warehouse stocks maintained in principal cities of the United States and Canada.
Jobbers in New York, New England, and New Jersey should write to Speedi-Dri Corp. Elsewhere in U. S. to Waverly Petroleum Products Co., 1724 Chestnut St., Phila. 3, Pa.
SPEEDI-DRI CORP., 1 Wall Street, New York 5, N.Y.
WHEN YOU BUY, BE SURE IT'S
SOL-SPEEDI-DRI
Reg. U.S. Pat. Off.
OIL & GREASE ABSORBENT
FREE SAMPLE:
Fill out the coupon and mail today for big, free sample.
Name
Address
City
State

Promote Safe Driving...Reduce Maintenance Costs...Increase Profit

TACHOGRAPH

THE TIME-TESTED RECORDING SPEEDOMETER

To make over-the-road truck operation more profitable, drivers and their employers must have real confidence in each other. When operations are on a basis of mutual understanding, payloads move smoothly and a lasting, profitable relationship results.

You gain the confidence of your drivers when you equip your vehicles with Tachographs. They promote safe driving which results in reduced maintenance costs and increased profits. Records prove that over-the-road vehicles equipped with Tachographs have fewer accidents . . . spend less time in the repair shops . . . and earn lower insurance rates.

The Tachograph gives a charted record of the entire trip—When engine started . . . How long engine idled . . . When vehicle was in motion . . . How fast it traveled . . . When vehicle stopped . . . and distance traveled between stops. Mail coupon for complete information.

★ ★ ★

"TACHOGRAPH SAVED MY TEN YEAR RECORD OF SAFE DRIVING" says . . .

Ray A. Johnson,
Driver for STANDARD OIL COMPANY

"With a ten year record of no accidents, I was accused of hitting a little boy. The highway patrol flagged me down, but my Tachograph chart showed I was stopped at the time of the accident. The officer then admitted the witness had only said it was a big red truck. I was allowed to proceed on my way."

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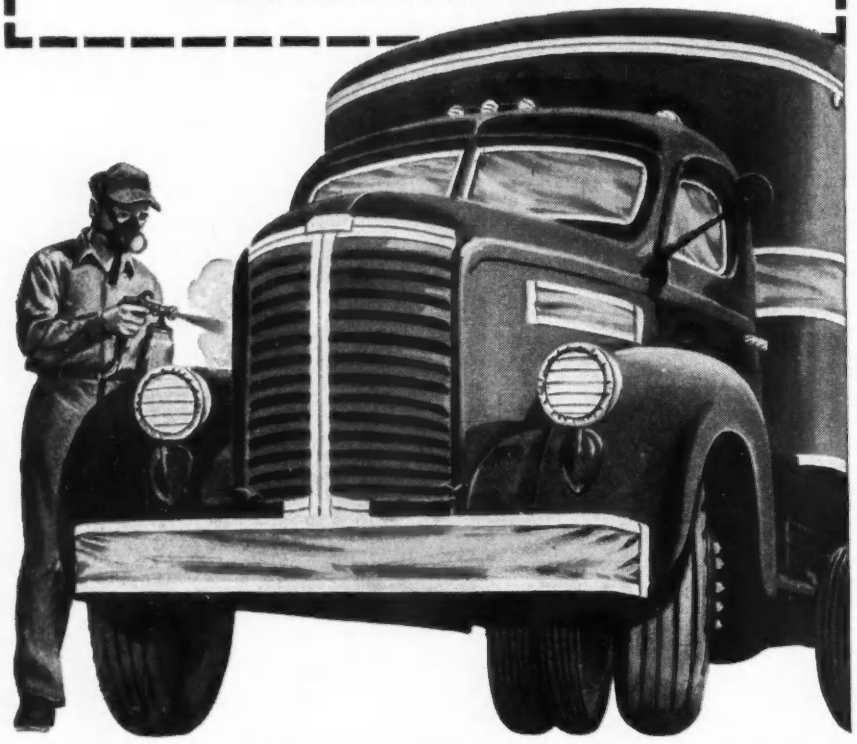
Please send a copy of Bulletin SU-3B.

Name and Position_____
Company_____
Address_____
City_____ State_____
We operate_____ (NUMBER) Vehicles_____

SU-1

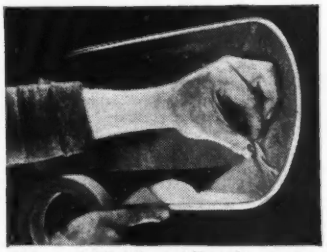
PERMACEL TAPE SPEEDS

REPAINT JOBS...SAVES "OFF-THE-ROAD" TIME... PROTECTS YOUR PROFITS!

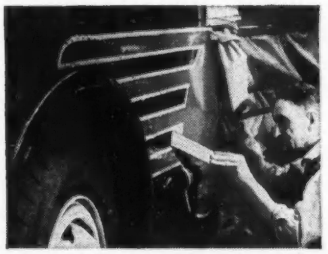


6 REASONS WHY Permacel-77 helps fleet owners SAVE MASKING TIME, CUT COSTS!

1. Comes off roll easier, quicker!
2. Maximum "Quick-stick"!
3. Stronger!
4. Conforms to tightest curves!
5. Faultless, accurate striping!
6. Strips off cleaner, easier!



Permacel-77 "Stretch" makes curves easy—speeds masking on windows of buses, cars, trucks.



Permacel-77 strips off easily, quickly —leaves no residue on painted surfaces.

SEND FOR THIS FREE ILLUSTRATED BOOKLET!

Twenty-five pages of masking procedure, complete with description of Permacel's new Portable Masker. Write today!

Permacel-77®

MASKING TAPE

INDUSTRIAL TAPE CORPORATION · NEW BRUNSWICK, N. J.

British Trucks

Continued from Page 128

(probably more than 3000 eventually), there will inevitably arise differences of opinion and disputes. None of these has yet reached the stage of being taken to appeal to the Arbitration Tribunal set up by the Act. There are some very important questions of principle which will require settlement in this way, and will affect nearly all the acquisitions.

This explains why not a single final agreement has yet been reached on the amount of compensation, and why it is likely to take many years in getting the matters cleared up.

Interest at 3 per cent is to be paid on whatever sum of compensation is finally determined, as from the date of acquisition until the date of payment.

Problems of Free Haulers

THE large number of free haulers who do and will remain outside nationalization are beset with big problems. They are tightly controlled in regard to their operating rights and, unlike the American system, in regard to their opportunities of expansion by increasing the size of their fleets. In all these repects, they are subject to opposition by their competitors, the Road Haulage Executive, but are quite unable to object to the activities of the Executive in return.

Free haulers also face strong competition from the Executive. However, while the existence of such a powerful rival cannot be lightly dismissed, there are many amongst those haulers who believe that it need not be too greatly exaggerated. They believe that individual enterprise and initiative by the small haulage firm, where the firm's finances are directly affected by the satisfaction which it is able to give to its customers, can satisfactorily stand

(TURN TO PAGE 132, PLEASE)

FWD Fights Fire

New Four Wheel Drive pumper, Model FR-50-T, painted a gleaming white with blue and gold trim, is equipped with 500 gpm 3-stage high pressure pump and 500 gal booster tank. Included are 45-ft 3-sectional aluminum extension, two 24-ft extension and 14-ft and 10-ft roof and attic ladders

Perry *Cooling System* Filter

PAT. PENDING

Passes ALLIED VAN LINES test!

Says Richard L. LaBelle
Vice President
LaBelle Safety Storage & Moving Co.
Agent of
ALLIED VAN LINES, INC.

"... we conducted rigorous field tests with Perry Cooling System Filters installed in two of our long-distance tractor trucks (K-7 International and 1½-2 ton Chevrolet) ... results at the first 1000 mile check were excellent and this performance continued throughout the test. Savings in maintenance expense, lost road time and even gas mileage were absolutely remarkable. Cooling system troubles were eliminated entirely. Perry Filters are now installed throughout our fleet!"

Even Heat Dissipation Cures "Hot Spots"— Main Cause of Burned Valves, Cracked Blocks, Scored Pistons ... The Perry Filter assures a *constantly clean cooling system* the year around and prevents scale insulation of block, water jackets and radiator — main cause of expensive engine damage. Softens coolant, prevents corrosion—effects substantial savings for fleet operators. Mail coupon today!

Pays for Itself!

The cost of ONE radiator cleaning and rodding job will more than pay for the Perry Cooling System Filter and installation. Your only upkeep cost is periodic change of inexpensive replacement element.

SPARK-O-LINER CORPORATION
601 11th Avenue South, Minneapolis 4, Minn.

Gentlemen: Please send free descriptive literature. I am interested in Model TB (illustrated) for trucks and buses 1½ ton and over ☐ in Model A for passenger cars, trucks and buses to 1½ ton ☐

Name .....

Company .....

Address .....

City ..... State .....

British Trucks

Continued from Page 130

up against the huge, centralized, top-heavy, bureaucratic machine of the Road Haulage Executive. By continuing that intensely personalized service to meet the precise requirements of individual traders and industrialists, they will be able to stand their ground.

It has been announced recently that the deficit from the nationalized transport commission for the year 1949 is likely to be about $60,000,000, mainly arising from railway and canal operations. Consequently, a move has been initiated to increase the charges levied by those bodies by 16 per cent. This must have the effect of throwing more traffic on highway transportation.

If the nationalized Road Haulage Executive attempts to follow suit, and to increase its charges, this additional traffic will tend to move by private transportation or by the free hauler, so far as the latter's restricted operating rights permit him to carry them.

Thus, there is every likelihood of further expansions of private transportation.

Conservatives Promise Change

THE result of the General Election on February 23, 1950, must be considered as a factor in the future of the British truck transportation industry. The Conservative party, now in opposition and seeking control in Parliament, has stated on several occasions that it intends to restore free enterprise in highway transportation.

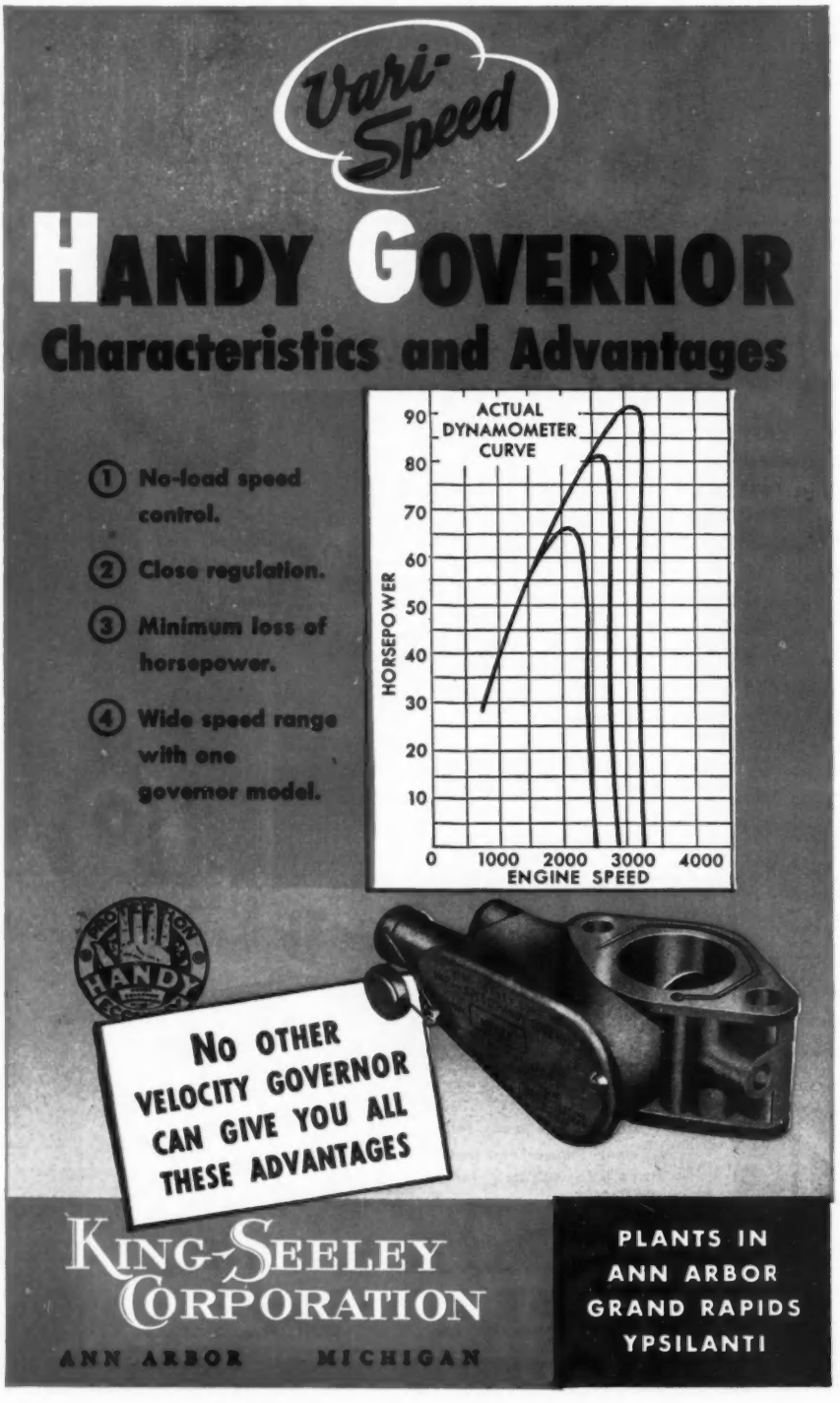
While it is generally true that "if there is a will there is a way," the Conservative party, if returned to power, will not find it an easy matter to "unscramble the egg" of nationalization. But, undoubtedly, it could be achieved.

Meanwhile, the Labour party is as much committed to nationalization as ever, in its official announcements. There is much disillusionment amongst the rank and file workers, who have already found that nationalization does not produce that nice, soft, easy living for them. Moreover, public opinion in general, especially that of the thinking middle classes, has been adopting a much more questioning attitude towards every aspect of nationization. It has not proved to be the universal panacea, which many of its advocates had claimed for it. There is much more insistence that every plan for nationalization should be laid out before the forum of public opinion, so that its claimed advantages can be properly weighed.

Thus, much turns on the result of the coming election. It is a pity when the fortunes of a great industry like highway transportation should be brought into the whirlpool of political controversy.

END

(Please resume your reading on P. 90)


Vari-Speed
HANDY GOVERNOR
Characteristics and Advantages
1 No-load speed control.
2 Close regulation.
3 Minimum loss of horsepower.
4 Wide speed range with one governor model.
ACTUAL DYNAMOMETER CURVE
HORSEPOWER
ENGINE SPEED
0 1000 2000 3000 4000
10 20 30 40 50 60 70 80 90
NO OTHER VELOCITY GOVERNOR CAN GIVE YOU ALL THESE ADVANTAGES
KING-SEELEY CORPORATION
ANN ARBOR MICHIGAN
PLANTS IN ANN ARBOR GRAND RAPIDS YPSILANTI

Rubber Use Declines

United States consumption of new rubber in the manufacture of transportation goods during the first nine months of 1949 declined 13.2 per cent compared with the same period a year ago, according to the U. S. Department of Commerce. Use of new rubber in transportation goods amounted to 496,559 long tons in the 1949 period as against 572,035 tons in the 1948 period.

★★★★★★★★★★★★★★★★★★★★★★★★★

SLOWGAN

An open stretch is an invitation to a vacant mind

★★★★★★★★★★★★★★★★★★★★★★★★★

EVERYBODY TALKS ABOUT THE WEATHER

...ONAZOTE

DOES SOMETHING ABOUT IT

(the modern thermal insulator)

ONAZOTE, EXPANDED CELLULAR RUBBER, one of the lightest, strongest, most durable thermal board insulations known, laughs at the weather. This great insulation with the constant K factor of 0.20; 4 lbs. density, holds cold and curbs heat equally as well.

That truck-trailer-tanker, that long string of refrigerator cars rolling through a sun-blistered desert or in sub-zero cold, will get perishables they're carrying to their destination in A-1 condition — and at destination, foods will remain in the same A-1 condition when stored in cold rooms insulated with ONAZOTE.

Specify ONAZOTE for its low conductivity, low weight, permanence of installation (its no-settle qualities eliminate replacement costs) for its structural strength and its proven, constant resistance to moisture, mildew and vermin.

Specify ONAZOTE for its economy — as a board insulation, it increases carrier pay load and cubic content . . . compare its low initial cost with other leading, well-known insulations.

Write for Full Details

ONAZOTE *the modern thermal insulator*

Thermal Conductivity 0.20 B.Th.U's

BRITISH XYLONITE INC., 754 Lexington Ave., Brooklyn, N. Y.

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Charleston "Rides With the Stars"

Continued from Page 80

The latter examination consists of 60 questions and we allow the candidates thirty minutes to complete it. The passing range is 25 to 45 correct answers.

We have found that a man who will not get 25 correct answers will have difficulty in learning the multitude of rules and regulations that must be second nature to a competent driver and would probably not understand the bulletins which we must issue from time to time.

Conversely, a man with a high enough IQ to score over 45 will probably become discontented with the routine of bus driving long before he would qualify for promotion, and either resign or become an unsatisfactory employe.

On the former test, that is, the personal reaction group of questions, we do not use a time limit and the grading standard is somewhat more flexible. This test consists of 50 situations and while we generally consider 25 as passing we carefully scrutinize the individual answers because a man might have a satisfactory score but, at the same time, he could have enough very wrong answers to indicate that he would not be a satisfactory driver.

After a candidate passes these examinations satisfactorily his references are carefully checked. If these are satisfactory he comes in for a final interview with the assistant superintendent. If this official feels that the man will make a satisfactory driver, he is sent to the company physician for a thorough physical examination. If he passes the physical standards he is directed to report to the next driver training school.

Driver Training

THE first portion of training which the prospective bus driver undergoes consists of about 40 hours of group training. A group of three to eight candidates reports daily to the driver instructor for five days. Initially, these men start driving a bus over a test course at the local fair grounds. Here we set up a group of stakes and require that each candidate repeatedly drive a bus in and out and among these stakes. This gives the prospective driver the opportunity to thoroughly familiarize himself with the necessary clearance to handle a heavy bus in traffic.

During this five-day training period, the prospective drivers are also shown three movies about bus driving, safety and courtesy. These movies are shown at different times during the week.

Instruction is also given in the mechanical details of the operation of the bus. Toward the end of the training period, the candidates are taken on a tour through our shops, during which the different running parts of a bus and how they should be taken care of are explained.

During the course of this training period, the drivers start driving the bus in traffic, first over non-congested streets and by the end of the week through the most congested downtown traffic. At any time during this training period the instructor may eliminate any student drivers who, in his judgment, will not become satisfactory drivers.

On the sixth day, each driver goes out with two supervisors, neither of whom is the training supervisor. At this time, the student driver must drive approximately five miles in various

(TURN TO PAGE 136, PLEASE)

The NEW

BUFFALO better-built

VL FIRE EXTINGUISHERS

with-

DRYEX THE AMAZING NEW DRYING AGENT!

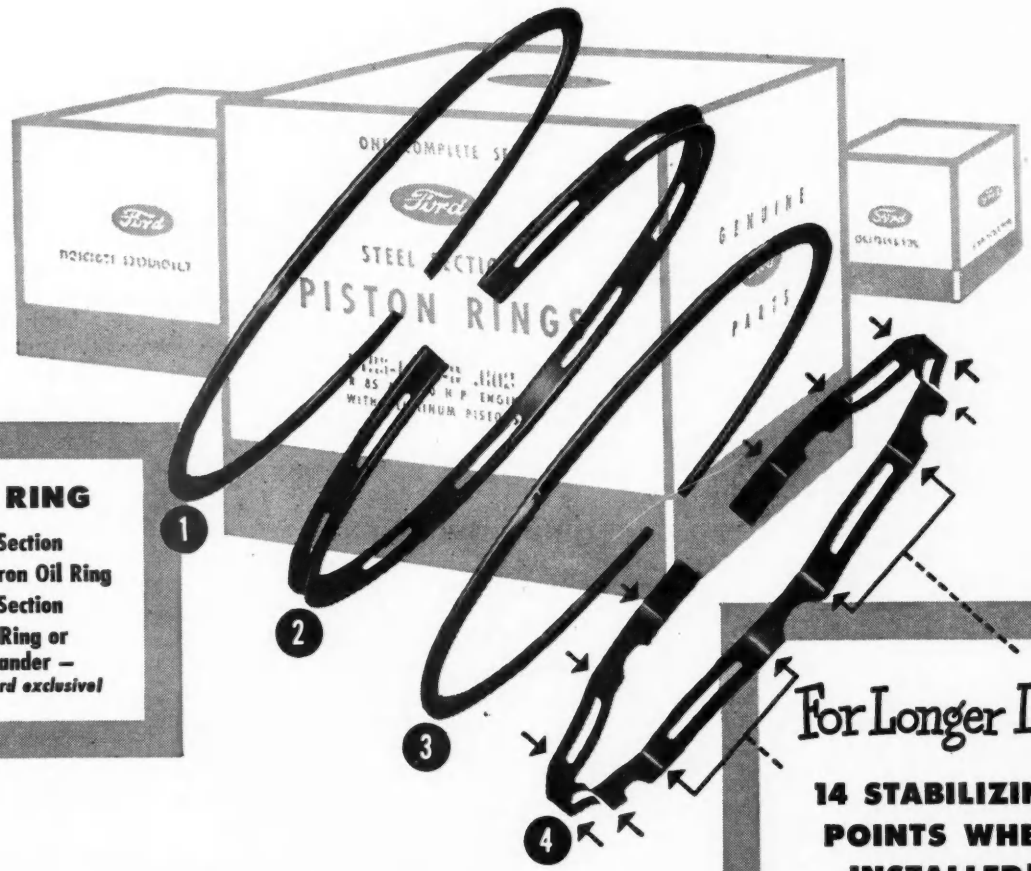
Every motor vehicle, every garage, repair shop and spray booth needs the protection of the Buffalo *better-built* VL Fire Extinguisher, *now more dependable than ever.* Each VL Extinguisher now contains DRYEX, the exclusive new drying agent that removes all traces of moisture, prevents corrosion and rust, insures continuous accuracy of performance and adds many years to the dependable life of the extinguisher.

Write us for full information on **DRYEX** and name of your nearest Buffalo distributor.

BUFFALO FIRE APPLIANCE
CORPORATION
DAYTON 1, OHIO
Established 1895

Commercial Operators—
Save Time and Money with

Genuine Ford Piston Rings



OIL RING

1. Steel Section
2. Cast Iron Oil Ring
3. Steel Section
4. Inner Ring or Expander — *a Ford exclusive!*

For Longer Life

14 STABILIZING POINTS WHEN INSTALLED! A FORD EXCLUSIVE!

Get longer life and save on oil consumption with Genuine Ford Piston Rings, scientifically engineered to perform better longer in your Ford Cars and Trucks. Naturally, Ford Parts are *right* for Fords . . . made to factory-standard specifications to work right, fit right and last longer. Order from your nearest Ford Dealer or Ford Parts Distributor.

GENUINE FORD STEEL SECTION PISTON RINGS

Exclusive . . . Patented . . . Made Right . . . Priced Right

Only cast iron ring section contacts cylinder wall under pressure during break-in period, eliminates scoring danger. After breaking in, steel ring sections absorb wearing forces. The inner ring has fourteen contact points which stabilize and control the ring and piston. Result—Genuine Ford Steel Section Piston Rings make for reduced piston vibration . . . longer piston and ring life . . . better oil control . . . more power and economy.

GENUINE Ford PARTS

Genuine Ford Parts... **Right for FORDS!**

FORD Division of FORD MOTOR COMPANY

"Rides With the Stars"

Continued from Page 134

kinds of traffic. Each of the supervisors carefully watches his performance and checks his operation against a number of points which we have found are those items most necessary for a man to be particularly adept in. Included in this test, of course, are the making of a number of right hand turns, left hand turns, starts and stops from and on down and up grades.

If the student successfully passes this test, he is next given a written examination of 15 questions designed to determine the degree to which he thoroughly understands certain basic points upon which he has been instructed during the past week. This test covers the physical handling of the vehicle but does not include such matters as fares, transfers, etc.

The following questions, selected at random, will give an idea of what drivers are expected to know about the care and operations of a bus.

"A gas motor should be warmed up at ( ) Idling speed, ( ) Just above idling. ( ) ½ throttle."

"The air pressure gage should not show below ( ) 70 lb., ( ) 90 lb., ( ) 100 lb., ( ) 65 lb.

"What would you do if you discovered your rear door was not working properly?"

We attach great importance to both of these tests. Here is where we hope to screen the good and bad drivers—those who will handle vehicles properly and those who are potential abusers. If the trainee does not meet our passing requirements, even after corrective polishing, he is rejected.

If the student successfully passes this test, he is then assigned for a period of about two weeks to break-in with regular drivers. In this portion of his instruction, the student driver operates a bus in passenger service under the direction of the regular driver assigned to that particular bus or run. In this manner, the student learns how to handle passengers, collect their fares, issue transfers, and make out the reports which our drivers are required to make to summarize their day's work. The student is assigned to a number of regular drivers during this period and each regular driver makes a report to the training superviso as to the student's progress.

After the student has been approved by regular drivers and qualified to operate on a number of our routes, he should be ready to start work as an extra driver. Before he can be assigned to the extra board, however, he is required to take a written examination consisting primarily of questions relating to the routes, fare, stops, transfers, and the handling of passengers. There is also a second portion of this test which relates entirely to safety.

Generally speaking, the student drivers pass these tests successfully because they are not given at a definite interval but are only given after satisfactory reports are received from a number of regular drivers with whom they have been assigned as students. After a man passes these tests he is then qualified to go to work as an extra driver and receive the regular rate of pay and work under the same conditions as other extra drivers.

To insure against the possibility of a driver forgetting any part of the instruction he receives, we have prepared a printed book of instructions. This book, of vest-pocket size, summarizes all regulations, working conditions, procedures, handling of passengers, handling of vehicles, general conduct and responsibility off and on duty. The driver is requested to be thoroughly familiar with the contents. This makes

(TURN TO PAGE 138, PLEASE)

they're here

AIRCO'S new small cylinders

Yours for leasing for 25 years (estimated lifetime) at average cost of $2.00 per year

Here, at last, is the ideal cylinder team to meet every day welding and cutting operations — a 122 ft. oxygen cylinder teamed with a 60 ft. acetylene cylinder. This combination gives you

THESE 4 BIG ADVANTAGES

1. **Better Gas Ratio** — meets the common demand for 2 to 1 oxygen-acetylene ratio.
2. **Easier Handling** — small, lightweight cylinders easy to move around the shop . . . or on your truck for field welding jobs.
3. **Greater Economy** — your savings on demurrage can amount to $5.20 or more per year. Airco makes ordinary wear and tear repairs and retests these cylinders at no charge to you.
4. **Always Available** — and when your cylinders are empty, you get a pair of full ones immediately . . . no valuable time lost waiting for cylinders to be filled.

Moreover, if you move your place of business, one of Airco's nation-wide network of dealers and plants will always be near to service your small cylinders.

Ask your local authorized Airco Dealer about the 25-year lease plan on these small gas cylinders. Also ask him about his complete line of gas and arc welding equipment and supplies that he can deliver immediately from stock. Do it now! Call him today.

AUTHORIZED AIRCO DEALER

This Emblem identifies your Airco Dealer

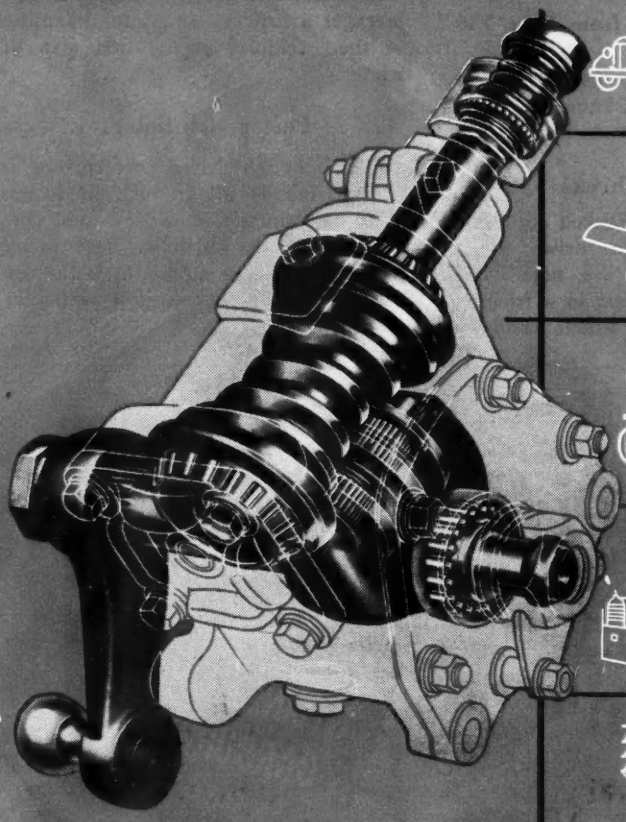
AIR REDUCTION

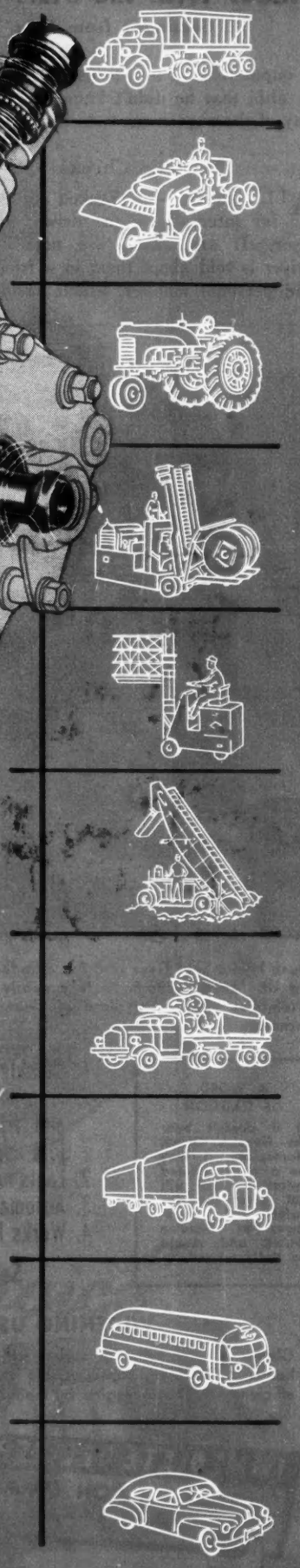
Offices in Principal Cities

Plus a Nationwide Dealer Organization

Headquarters for Oxygen, Acetylene and Other Gases . . . Calcium Carbide . . . Gas Cutting Machines . . . Gas Welding and Cutting Apparatus, and Supplies . . . Arc Welders, Electrodes, and Accessories

Gemmer Easy Steering Lowers Costs





by Cutting Maintenance . . . and Speeding Schedules

Easy maneuverability of Gemmer steered vehicles helps to make faster schedules through traffic, in and out of parking places, docks and narrow entries. The lessened steering load substantially reduces driver fatigue. No letdown the latter part of the day. Increased mileage per vehicle makes for important reduction in operating as well as capital costs.

Gemmer Easy Steering cuts maintenance. Having little or none of its own, it contributes to reduction of over-all vehicle maintenance. Easy maneuverability plus alert, untired drivers help hold down vehicle damage costs.

Gemmer Easy Steering is always responsive, firm, with no rubbery feeling or wander. Rolling gear tooth sector, plenty of antifriction bearings, almost eliminate friction. Strength is abundant and there is plenty of power for parking.

With reasonable care, a Gemmer Steering Gear will last the life of the vehicle.

GEMMER MANUFACTURING CO.

6400 Mt. Elliott • Detroit 11, Michigan

Gemmer Has Made Motor Vehicle Steering Gears for 43 Years

"Rides With the Stars"

Continued from Page 136

it impossible for him to use any excuse or alibi that he didn't know, or forget any of the requirements to his job.

Periodic Checks

ALL men are spot checked at irregular intervals by the driver supervisor. If any faults are noted, the driver is told about them in a friendly and personal manner, which has been found sufficient to snap him back in line. Also, men hired during the summer get a briefing on winter handling of their vehicles at the first sign of winter.

Poster Reminders

EVEN though driver performance is satisfactory all around, we do not relax our efforts to make it better. One of the methods which we have found to be particularly successful is the use of small posters to convey a particular message.

The messages vary according to conditions and deal with the most common problems of driver supervision. We have a poster, for example, that shows a starry-eyed young lady engaging a driver in a bit of romantic chit-chat. Two matronly ladies are watching the scene and one must have inquired if the young lady is the driver's wife. The second, apparently well informed, replies with an insinuating "Oh, yeah?" This poster is designed, not only to discourage flirtations, which distract the driver's attention from his duties and can cause accidents, but to remind him that such actions encourage gossip, which is bad both for him and the company.

Another poster will remind our drivers to be considerate to motorists. Still another poster shows a driver blindfolded with a wisp of fog encircling him. This we use to caution drivers when foggy conditions create a road hazard.

These posters are prepared for us at a very nominal cost by local amateur talent—two boys attending the local high school. We conceive the idea and call the boys in to explain just what we want. The boys prepare a rough sketch, in pencil, showing their interpretation of our idea. If they get the point across satisfactorily, they are told to finish the poster in two or more colors.

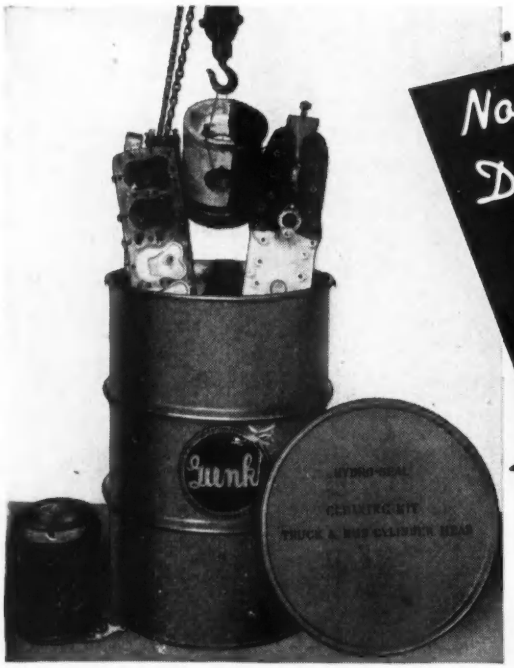
In use, the posters are hung on two nails over the daily check-in sheet. The humorous twist and light treatment given to these important messages make them far more acceptable than notices posted on the bulletin board or lectures by the drivers' supervisors.

Driver Reports

WE PLACE great stress on having drivers report any mechanical defects experienced during the day's run, and the thorough reporting of all accidents to passengers or vehicle, no mat-

(TURN TO PAGE 140, PLEASE)

"So all those trucks outside mean good food, eh?"



Nothing Decarbonizes and Cleans CYLINDER HEADS, CARBURETORS, PARTS Like...

HYDRO-SEAL
GUNK Dunk

Gunk Hydro-Seal Truck and Bus cylinder head cleaning kit. Large enough to take nearly all standard assemblies. Makes purchase of cleaning tanks unnecessary for many shops.

A WORD OF CAUTION
If it doesn't bear the Genuine GUNK Nameplate, it may be a partly diluted imitation — and will not give you the Safety and Advantages of Genuine GUNK and should be flatly refused.

1. Quickly digests and removes carbon gum, paint, lead, makes possible accurate visual inspection and fitting of delicate metering mechanisms, jets and orifices.
2. Lasts more than one year . . . due to Hydro-Seal.
3. Automatic rinsing.
4. Works hot or cold.

Sold by better jobbers everywhere

WIDENING USE FOR LABOR SAVER

Cleans cylinder heads of carbon without scraping . . . cleans water side of cylinder heads of insulating algae, grease, sludge and scale—thus restoring original thermal efficiency built into engine by manufacturer.

IMMEDIATE DELIVERY
1 GALLON OR A TANK CAR

CURRAN CORP.
Mfg. Chemists
LAWRENCE, MASS.

Design Patented

7712-7714-7716
Primary Wire
in 7 Colors
7710 in 2 Colors

for More "Miles of Service"

BATTERY CABLES • SPARK PLUG WIRES
LIGHTING WIRES
CORDLITES, EXTENSION CORDS, AND TOOLS

Belden *Automotive* **WIRE**

"Rides With the Stars"

Continued from Page 138

ter how slight. In the latter case we insist that the driver also procure names of witnesses. Failure to make out such full reports may lead to disciplinary action, and a demerit against the annual award.

The reason for our strictness in this regard is quite obvious. The drivers know that such information, whether it applies to vehicle condition or accidents, is for their protection as well as ours. In the case of vehicle condition, a seemingly small defect experienced on one shift may result in vehicle failure on the next shift, with resultant unnecessary road call and interference with schedules. In the case of accidents, complete information obtained at the scene of accident will prevent much trouble, argument and ill-will when adjustments, repairs and settlement for damages must be made.

Annual Safety Awards

IT PAYS our drivers to do a good job, and to use every caution and effort at their disposal to avoid accidents. If a driver operates his vehicle for one year without a chargeable accident he is rated as a star driver.

We adhere to the standard definition of a chargeable accident, namely, an accident caused directly due to the failure to exercise every possible precaution to prevent the accident.

Failure to obtain witnesses and make a full report of an accident may be placed in the same category as a chargeable accident, even if the driver was not responsible for the accident. We, and our insurance underwriters, would much rather make settlement to some motorist for a banged up fender where the driver obtained witnesses testifying it was his fault, than to have a driver take such a situation in his own hands by deciding the incident was inconsequential and not worth making out an accident report and obtaining witnesses. It is a matter of record that such arbitrary decisions on a driver's part can result in serious and expensive law suits months after the incident seemingly was closed.

At the end of each calendar year, the records of all drivers are summarized. Drivers who have gone throughout the year without a chargeable accident are rated as star drivers. This entitles them to a full uniform without cost, and to wear a star on the sleeves of their uniforms inside of which is designated the number of star driving years which they have accumulated. Their pictures are placed in a full-page newspaper ad, together with the appropriate records under each driver's name. Drivers with less perfect records may get a full uniform without cost, three-quarters of a uniform or one-half of a uniform.

We feel that the publicity which goes along with the annual newspaper advertisement serves as quite an incentive to our drivers to merit the star rating. The individual photographs are grouped quite accurately according to performance and seniority. At the top of the advertisement we always place the group of drivers who have gone throughout the year without an accident report of any kind. This is intended to be a distinction but not a great distinction, because the fact that a man did not have to make out an accident report for an accident which

(TURN TO PAGE 142, PLEASE)

Set No. 745RL Outside Micrometers • Range: 0 to 4 inches by thousandths • Four Micrometers, complete with Ratchet Stops, Lock Nuts and Standard Test Gauges in DeLuxe Plush-Lined Case.

Set No. 808 Inside Micrometer • Range: 1½ to 8 inches by thousandths • Complete with Extension Handle in DeLuxe Plush-Lined Case.

Central Micrometers are right in step with today's need for accurate automotive work. Central Mike fits em right . . . the first time . . . every time: Eliminates fit-and-try methods and speeds repair jobs. That's why more motor mechanics buy Central Micrometers than any other make. See your jobber or write for catalog. There's a Central Micrometer for every requirement.

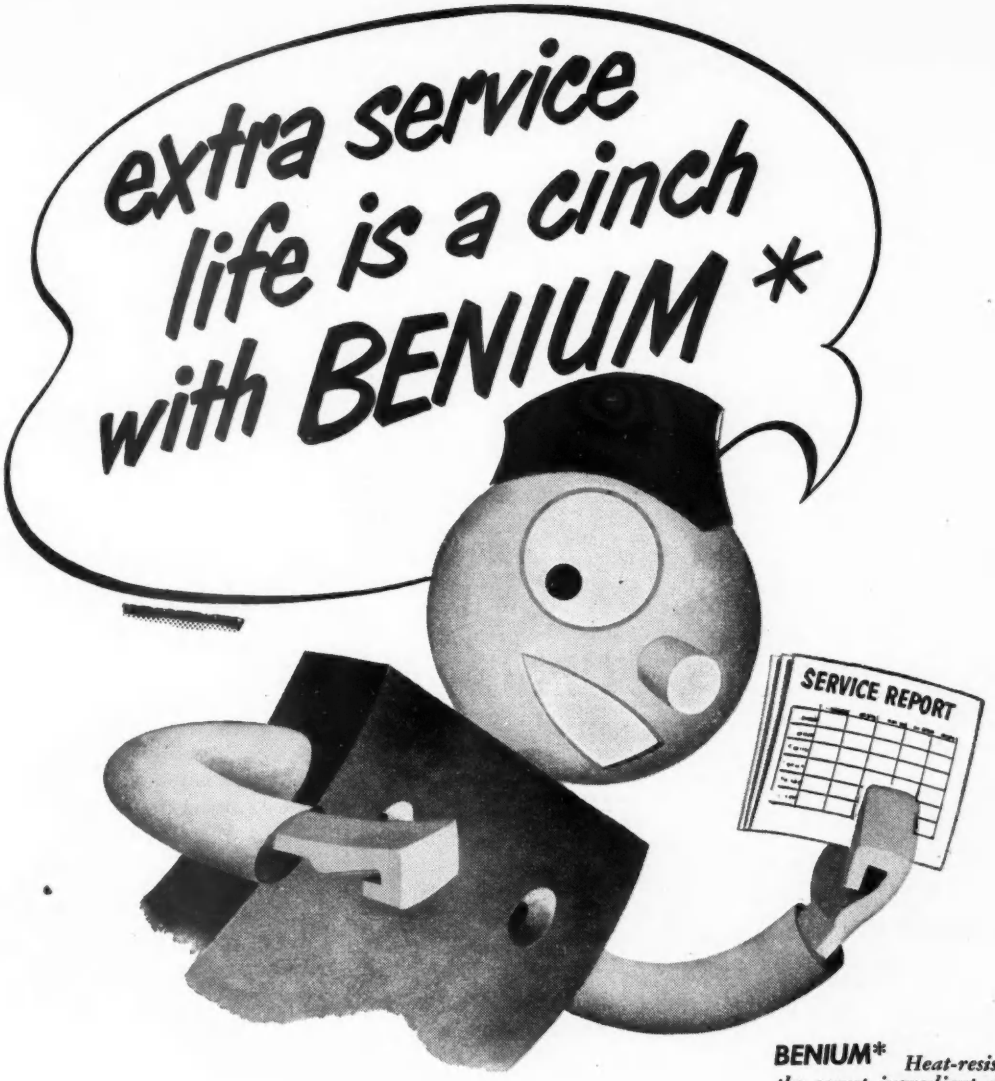
THE CENTRAL TOOL COMPANY
474 WELLINGTON AVENUE
CRANSTON 10, R. I.

CENTRAL
Certified Accuracy
MICROMETERS

For Half a Century Specialists in Fine Micrometers

SLOWGAN

If you lean over backwards in being fair, it's harder for your enemies to kick you in the pants



BENIUM* *Heat-resisting material is the secret ingredient developed by the Marshall-Eclipse Division of Bendix and used exclusively in Eclipse brake linings and heavy-duty brake blocks.*

Here's one claim you can prove yourself—with your own tests on your own trucks. Just install Bendix Eclipse Brake Blocks on a regular run, check the mileage, then sit back and watch. The extra control with those smoother, safer stops will be apparent immediately, but the most important difference you will notice is the added road life—those extra miles just keep on rolling by. When you check the totals, you'll be amazed at the difference **Benium** makes. Give it a try. You'll agree—extra service life is a cinch with Bendix Eclipse Brake Blocks.

Bendix Eclipse
BRAKE BLOCKS

PRODUCT OF

the Greatest Name in Braking!

MARSHALL-ECLIPSE DIVISION OF
TROY, NEW YORK

Bendix
AVIATION CORPORATION

"Rides With the Stars"

Continued from Page 140

could have happened due to causes over which he had no control whatsoever is a matter of luck rather than skillful driving.

Greater emphasis is given to the number of years of star driving which the individual man has successfully completed and the drivers generally are grouped in that manner.

In a community like Charleston the regular riders of our buses know a large number of the drivers because they ride with them day in and day out. If a man's picture fails to appear in the newspaper ad of star drivers it will, in all likelihood, cause him a certain amount of embarrassment from his regular patrons asking why.

From our point of view, such public reception is invaluable as a prestige and morale builder for our driver personnel. We feel that the net result is much better than if the driver were given twice the value of a uniform in cash at an employee meeting that would have a maximum duration of an hour. We also gain from the fact that under this arrangement the majority of our drivers win a new uniform each year. This enables them to, at all times, present an attractive and neat appearance when they are at work.

In closing, it is our feeling that the star driver program provides an effective incentive for safe operation, results in our drivers having a neat appearance at all times and builds a large amount of community good will because it makes the general public realize that on our buses they "Ride with the Stars."

END

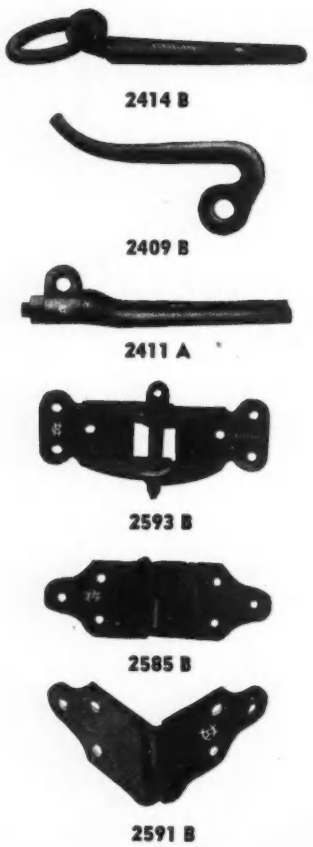
(Please resume your reading on P. 81)

"Cleveland"

SPECIALIZED STOCK FORGINGS

AND

QUALITY BODY HARDWARE



2414 B

2409 B

2411 A

2593 B

2585 B

2591 B

A COMPLETE LINE of truck, bus and trailer hardware, drop-forged body irons and parts designed to give dependable service through the years.

● Where fine appearance and ability to stand up under severe punishment is required, the custom and production builders of commercial bodies have been insisting upon *"CLEVELAND"* products.

CLEVELAND PRODUCTS ILLUSTRATED

#2414-B END GATE EYES WITH RING
Length from c eye 9⅞"

#2409-B END GATE CHAIN HOOKS
Length from c eye 4 7/16"

#2411-A SWIVEL END GATE STRAPS
Dia. of hole 15/32". Others 9/16", ⅝", etc.

#2593-B STAKE RACK HINGES
3/16" steel, ⅜" dia. pin.

#2585-B STAKE RACK CONNECTIONS
Light Patterns. 2½" x 3/16" stock. Also in Heavy Pattern.

#2591-B STAKE RACK CONNECTIONS
Light Pattern. Also in Heavy Pattern.

ESTIMATES FURNISHED

on Special Automotive Forgings and Die Castings to your prints where quantities justify.

THE CLEVELAND HARDWARE and FORGING COMPANY

3264 East 79th St. Cleveland 4, Ohio

Seven Steps to Highway Progress

With shoulder to the wheel and nose to the grindstone, the American Road Builders' Association working jointly with the American Association of State Highway Officials outlined an impressive seven-point program guaranteed to increase efficiency and influence economy in the highway industry and profession. Studies scheduled in the collaborative effort include:

Extension of Federal-aid legislation; amount of such aid, appropriate division of it as to road classification (interstate, primary, urban, secondary and local); division of costs (advisability of increasing federal share).

Relative economy of the contract system as compared with day labor methods.

Ways and means of reducing overhead and direct costs for secondary roads.

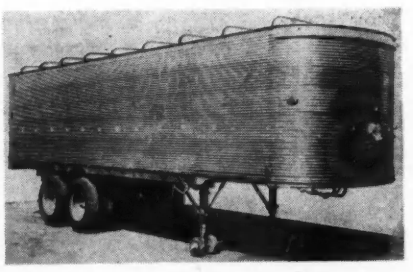
Methods of improving state-county cooperation.

Development of construction machinery specifications.

Simplification of specifications to eliminate unnecessary costs.

Development of programs directed toward keeping the public accurately informed on important highway matters.

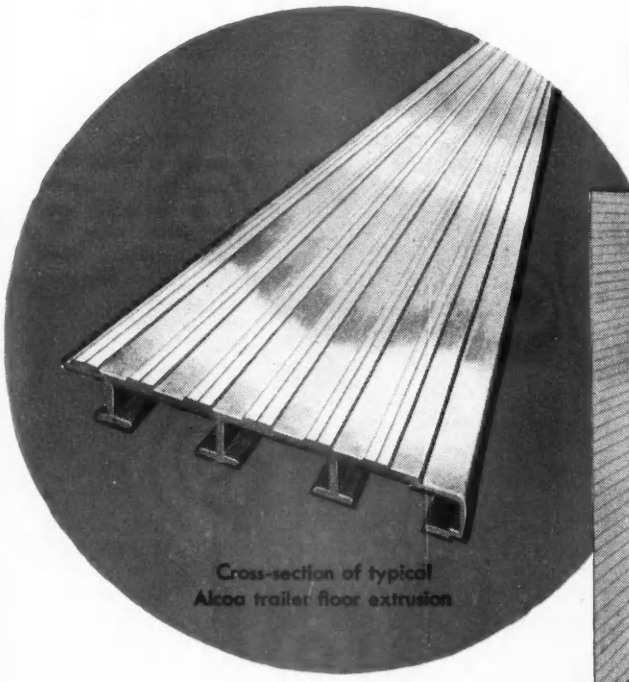
Fruehauf Loses Weight



Newest stainless steel open-top Fruehauf van, 32-ft gravity tandem with full magnesium floor, is claimed to be the world's lightest and strongest

HOW TO SAVE UP TO 475 LBS.

in trailer floor weight



Cross-section of typical Alcoa trailer floor extrusion

Would you like to cut trailer floor weight over one third—and get a stronger, longer-lasting floor in the bargain? You can! Next time you replace a floor or order a trailer, specify an aluminum or magnesium floor made of ALCOA Extruded Sections.

In a 35-foot trailer, for example, an aluminum floor saves 475 lbs. compared to a 1¼" oak floor. A comparable magnesium floor will save you 630 lbs. You cut weight proportionally on smaller trailers. Your light metal floor is rigid, strengthening the entire trailer understructure. It is permanent—with proper care, will last for the life of the trailer. It is non-skid, easy to keep clean and sanitary.

Ask your trailer builder about floors of Alcoa Aluminum and Magnesium, made to fit *your* trailers. Or contact your nearby Alcoa Sales Office.

SEND FOR YOUR FREE COPY of "Payload Proof"

Alcoa's new 36-page booklet on aluminum trailers. Performance records, weights, structural information. Write to ALUMINUM COMPANY OF AMERICA, 1860B Gulf Building, Pittsburgh 19, Penna.

For local source of supply on ALCOA Products, look under *ALUMINUM* in your Classified Telephone Directory.

ALCOA FIRST IN ALUMINUM ...THE METAL THAT *LASTS*

ALCOA ALUMINUM

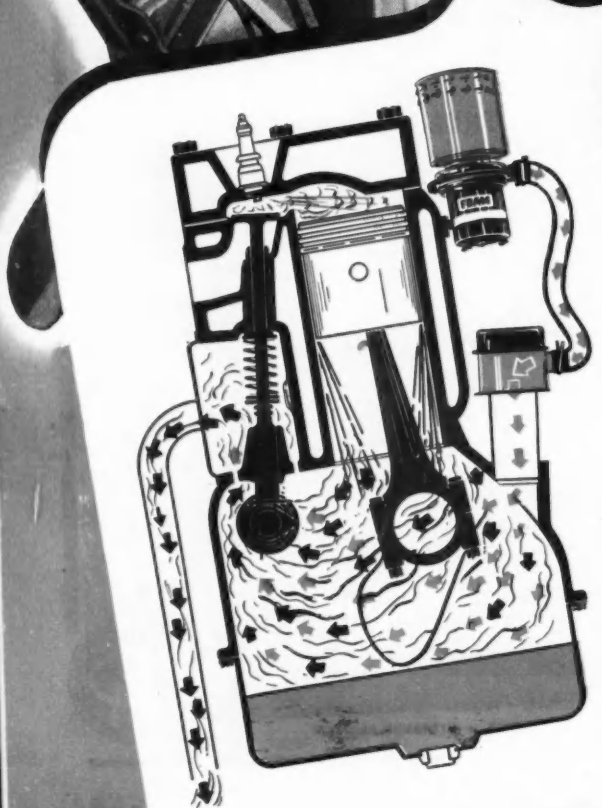
INGOT • SHEET & PLATE • SHAPES, ROLLED & EXTRUDED • WIRE • ROD • BAR • TUBING • PIPE • SAND, DIE & PERMANENT-MOLD CASTINGS • FORGINGS • IMPACT EXTRUSIONS
ELECTRICAL CONDUCTORS • SCREW MACHINE PRODUCTS • FABRICATED PRODUCTS • FASTENERS • FOIL • ALUMINUM PIGMENTS • MAGNESIUM PRODUCTS

FRAM'S FIRST

Fram Carburetor Air Filter removes harmful dust from air before it enters the intake. Uses completely new, more efficient method of filtration with low-cost replacement cartridge.

Fram Gasoline Filter removes water, rust, dirt and scale from gasoline. Protects finely adjusted modern carburetor mechanisms.

Famous Fram Oil & Motor Cleaner "cleans the oil that cleans the motor." Removes sludge and harmful corrosives manufactured inside engine. Provides clean oil lubrication. Assures longer engine life.



"FRAM POSITIVE CRANKCASE VENTILATOR Answered Our Prayers to STOP SLUDGE"

Fleet Operators report this amazing Fram Positive Crankcase Ventilator really licks sludge problems. It pays off particularly in cases of excessive contamination and sludge formation due to low-speed, cold-weather and stop-and-go driving. Saves engines, oil and oil filter cartridges by removing corrosive blow-by gases as they form . . . before they do their damage.

Here's How it Works

The upper half of the unit is an economical replacement cartridge that uses Fram-Tex filtering media to filter incoming air. The lower half is a Fram-developed electrically-driven blower that circulates clean, filtered air through the crankcase and out the road draft tube at a continuous, uniform rate . . . regardless of engine or vehicle speed. This clean air ventilation carries away corrosive blow-by gases as they form . . . before they contaminate the oil and form sludge, acids, corrosives. Gives you cleaner engines, lower costs.

with a positive check on

Oil and Cartridge Condition

THE SENSATIONAL FRAM

LUBRI-GRAF

STOP wasting time, cartridges, money! Here at last is a device that tells you when to change cartridges and gives you a visual record of your entire fleet. Obsoletes arbitrary mileage basis maintenance. It was invented by a fleet operator who brought it to Fram and now Fram is passing it on to *you*.

The Lubri-Graf is a handy chart on which you list your vehicles. Opposite each vehicle are 31 indicator spots so you can make a daily check for each month's operation. All you do is place daily sample of oil from dipstick in the proper indicator spot. If the oil obscures the color dot, it's time to change cartridge.

The Fram Lubri-Graf gives you visual proof of the operating efficiency of your engines. Shows you which ones are contaminating oil and eating up cartridges too fast. Forewarns before there's real trouble . . . spotlights vehicles due for overhauls. Saves you money, cartridges and down-time. Actually makes fleet maintenance paper work fun. Try it on your fleet.

FRAM CORPORATION, PROVIDENCE 16, R. I.
***In Canada:* J.C. Adams Co., Ltd., Toronto, Ontario**

For Complete Engine Protection

FRAM

OIL - AIR - FUEL

FILTERS

Send coupon for FREE Fram Lubri-Graf

Send coupon today for a genuine Fram Lubri-Graf absolutely FREE! Test it with your fleet and see what a great cost-cutting device it can be. Get complete details about how you can get a regular supply of Fram Lubri-Grafs and a specially designed metal stand to hold them. Just fill in and mail. There's no obligation. Do it NOW!

FRAM CORPORATION, Providence 16, R. I.
Gentlemen:
Please rush me FREE FRAM LUBRI-GRAF and complete details on how I can get a regular supply of them plus handy metal stand.

Name .....
Company .....
Address .....
.....
We operate ..... (number) ..... (type of vehicles)
• We regularly purchase through ..... (name of automotive wholesaler)

Legislative Outlook for 1950

Continued from Page 73

port of the Massachusetts Turnpike Commission and consideration of a toll road from Connecticut to the New Hampshire state line; increase in the legal length of buses from 35 to 40 ft.

MISSISSIPPI—A proposal for 2-cent gasoline tax increase which probably will be resubmitted to the regular session; proposal of committee for long-range highway program; anti-diversion constitutional amendment; uniform driver's license law; certificate of title law.

NEW JERSEY—Axle weight limitation based on recommendations of North Atlantic State Highway Officials; anti-diversion constitutional amendment; legislation for appointment of Interim Committee to prepare long-range highway program.

NEW YORK—Possible bill for reduction of axle weights according to recommendation of North Atlantic State Highway Officials; certificate of title law; compulsory motor vehicle inspection; increased aid for county and town roads; possibility of truck legislation resulting from joint committee investigation of taxation of commercial vehicles.

RHODE ISLAND—Bill to prohibit diversion of 88 per cent of special highway user taxes; creation of an Interim Study Committee with user representation to prepare a long-range highway plan of the type advocated by members of highway users' groups; reports of studies by an Interim Commission making a comparison of motor vehicle laws with the Uniform Vehicle Code.

SOUTH CAROLINA—Gasoline tax increase of 1 cent; proposal to change gasoline tax refund system to an exemption system; additional amendments to motor vehicle laws to make them conform more closely to Uniform Code.

VIRGINIA—Several proposals to make motor vehicle laws conform more closely to Uniform Code, including provision against passing stopped school buses and chemical tests for drunken drivers; flat $5 registration fee for passenger cars; amendment of Motor Vehicle Code to permit first class cities to pass pedestrian control ordinances; measures for liberalization or elimination of reciprocity; imposition of ton-miles taxes and creation of ports of entry; anti-diversion constitutional amendment; increase in gross vehicle weights; proposals to limit leasing of trucks.

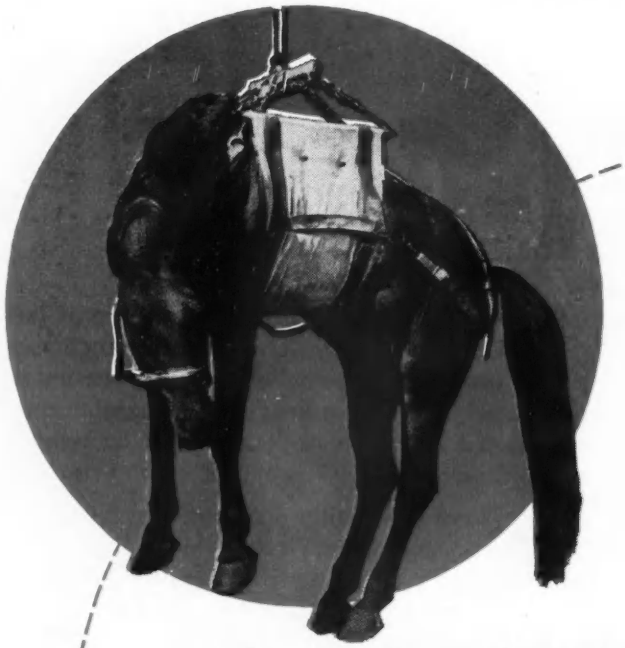
Summary of 1949 Legislation

FORTY-FOUR state legislatures met in 1949, and all have adjourned sine die except GEORGIA and MISSOURI, now in recess. A year-end review shows the following results:

MOTOR FUEL TAX—Motor fuel taxes were increased in each of the following 16 states in 1949:

DELAWARE—1¢
GEORGIA—1¢
KANSAS—1¢
MINNESOTA—1¢
MISSOURI—2¢
MONTANA—1¢
NEBRASKA—1¢
NEVADA—½¢
NEW MEXICO—2¢
NORTH CAROLINA—1¢
NORTH DAKOTA—2¢
OKLAHOMA—1¢
OREGON—1¢
PENNSYLVANIA—1¢
VERMONT—½¢
WASHINGTON—1½¢

(TURN TO PAGE 150, PLEASE)



Worth Hanging On To

Anything you can get hold of that helps cut maintenance and operating costs these days is worth hanging on to. Thermoid *Pre-Stretched* Fan Belts, for example. Pre-stretching prevents slipping—checks fan belt failure before it starts. To show how effectively the Thermodized Pre-Stretching Process assures perfect fit and tension at all times, the weight of a 1500-pound horse was suspended from a Thermoid Pre-Stretched Fan Belt. The belt was then returned to service in the car from which it had been taken *and it worked perfectly at the original adjustment.* That's why Thermoid Fan Belts are a "horse of a different color"—they last longer, work better, cost less in the long run. Specify *Thermoid* for superior performance under all operating conditions.

One Line—The Top Quality Line

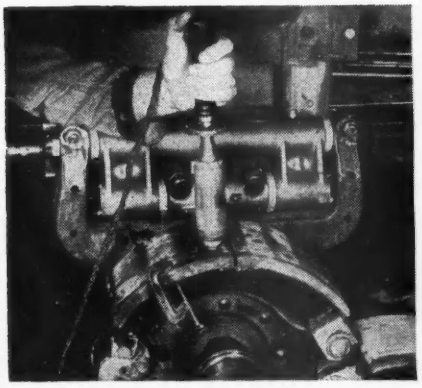
Thermoid Company • Trenton, New Jersey

Thermoid

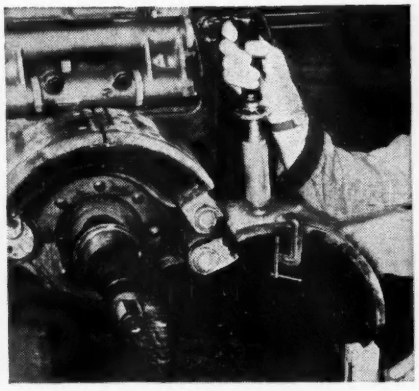
Brake Linings • Fan Belts • Radiator Hose • Hydraulic Brake Parts and Fluid • Car Mats • Clutch Facings • Thermoid Precision Process Equipment

Replaces Linings Without Removing Brake Shoes by Using Du Pont Hi-Speed Explosive Rivets

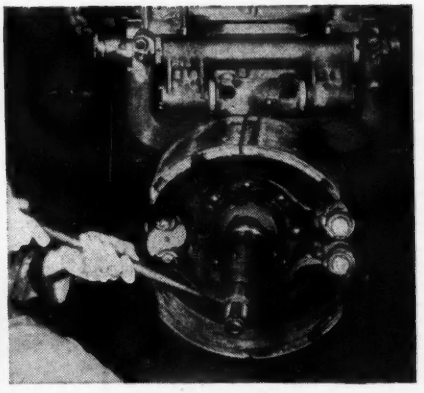
New, simplified method saves 50% on installed cost



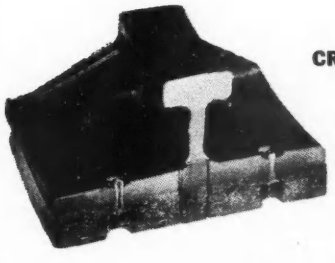
LEAVE BRAKE SHOE ON. After removing spring and worn-out brake block, swing lower shoe out of the way and prop it up into position. Put new linings into place on anchor plate and hold in position with clamps.



TAP SPECIAL DU PONT Brake Shoe Explosive Rivets into holes, working from heel side of block. Touch Rivet heads with heated No. 9A Du Pont Riveting Iron. Rivet shank expands, fills hole, locks lining to anchor plate.



SWING BRAKE SHOE BACK to original position and engage spring. The job is done, and done well. One shop reports Special Du Pont Brake Shoe Explosive Rivets cut installed costs for this job by 50 per cent!



CROSS-SECTION SHOWS how Special Du Pont Brake Shoe Explosive Rivets hold new brake lining to shoe. Note barrel-shaped Rivet heads that lock lining to plate. Dynamometer tests show Rivets in each assembly do not pull loose.

DU PONT Hi-Speed Industrial Explosive Rivets are modern, high-speed fasteners... comparable in strength to solid rivets. This means you can often replace conventional fasteners with these Rivets and realize a substantial saving of time and money . . . particularly on blind or hard-to-reach fastening jobs.

What's more, you don't need to make a large investment in specialized tools when you start using Du Pont Rivets . . . and your mechanics require no special training or instruction . . . they simply insert Rivets and expand them . . . a quick, easy job.

Both for truck and trailer body repair and assembly work, Du Pont Hi-Speed Explosive Rivets are more than paying their way in many shops. Why not take a closer look at *your* fastening operations and see if these Rivets can cut costs . . . make the job easier . . . or save time for you? Get all the facts by writing today for Bulletin "CJ." E. I. du Pont de Nemours & Co. (Inc.), Explosives Dept., Wilmington 98, Delaware.

DU PONT HI-SPEED INDUSTRIAL EXPLOSIVE RIVETS

DU PONT
REG. U.S. PAT. OFF.

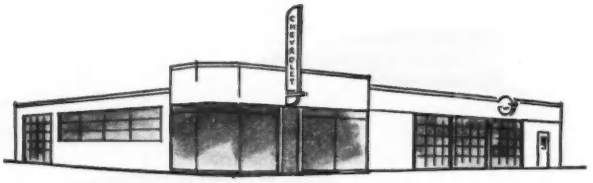
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

FLEET

We are Ready, Willing and

With GENUINE

Get them from your LOCAL CHEVROLET DEALER



Your local Chevrolet Dealer stands ready, willing and able to fill your Chevrolet service parts needs. He maintains large and balanced stocks of parts to fill your orders quickly and efficiently.

FIRST FOR QUALITY...

FOR YOUR BEST DEAL . . . DEAL

OWNERS . . .

Able to Supply You

CHEVROLET PARTS

Years of careful research — more years of exacting tests — stand behind every genuine Chevrolet part. Some of the best engineers and designers in the country have spent their business lives making genuine Chevrolet parts as fine as possible. That is one important reason why you as a fleet owner should be sure that you use *only* genuine Chevrolet parts in your fleet service work. Then and only then, can you be sure of the same superior quality that has made the name Chevrolet famous for long and faithful service.

WITH YOUR CHEVROLET DEALER!

. . . AT LOW COST

Legislative Outlook

Continued from Page 148

The NEBRASKA increase is in effect, but will be submitted to referendum next year. The MISSOURI and NORTH DAKOTA increases have been suspended pending referendums.

Temporary tax rates were made permanent in FLORIDA, MAINE, MASSACHUSETTS, WEST VIRGINIA and IDAHO.

Tax increases were proposed and defeated in 17 states:

ALABAMA—1¢
ARKANSAS—2¢
CALIFORNIA—½¢
CONNECTICUT—1¢
FLORIDA—1¢
ILLINOIS—2¢
INDIANA—2¢
MASSACHUSETTS—1¢
MICHIGAN—2¢
NEW HAMPSHIRE—1¢
NEW YORK—1¢
SOUTH CAROLINA—1¢
SOUTH DAKOTA—2¢
UTAH—2¢
WEST VIRGINIA—1¢
WISCONSIN—1¢
WYOMING—1¢

REGISTRATION FEES—Numerous changes were made in motor vehicle license taxes. In this field, the trend unmistakably was toward additional or increased rates.

ARKANSAS changed the basis of registering motor vehicles from carrying capacity to a gross weight basis, and provided a corresponding table of weight fees.

The DISTRICT OF COLUMBIA levied a 2 per cent tax on the market value of each motor vehicle or trailer, with the issuance of each certificate of title.

INDIANA changed its basis of registration from carrying capacity to gross weight, and increased all fees approximately 10 per cent.

IOWA also increased its commercial vehicle fees approximately 10 per cent.

KANSAS increased its registration fee for commercial vehicles about 30 per cent in the new law that becomes effective January 1, 1950.

MARYLAND enacted a separate schedule of fees providing increased rates for vehicles other than those operated by domestic corporations, railroads, public utilities and contract carriers. All vehicles now are exempted from personal property taxation.

MINNESOTA repealed the major portion of its vehicle tax law, and substituted new provisions increasing passenger car fees substantially. The mileage tax on interstate vehicles was repealed, and commercial vehicles are now registered on a gross weight instead of a capacity basis.

MONTANA imposed a use tax of $32 on all new pasenger cars, subject to quarterly reduction. New taxes on trucks range from $5 to $100, in addition to existing fees.

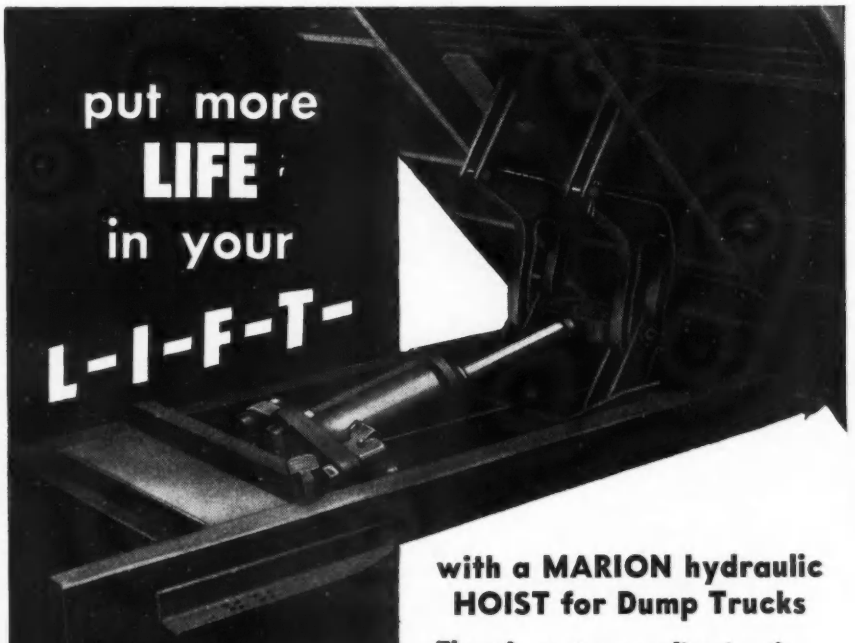
NEBRASKA increased its fees on all commercial vehicles with new fees on trucks ranging from $10 for ½-ton truck to $770 for a truck carrying 25 tons. A new schedule of fuel tax equalization fees was provided for non-gasoline propelled vehicles, in lieu of fuel taxes.

OHIO provided for registration of buses according to passenger capacity, instead of the former flat fees.

OREGON amended its mileage tax law to simplify collection by providing new rate tables; for some types of carriers this results in increased rates.

SOUTH CAROLINA rearranged the schedule of registration fees for trucks

(TURN TO PAGE 154, PLEASE)



with a MARION hydraulic HOIST for Dump Trucks

There's extra profits in the way Marion Hydraulic Hoists are "designed on the job" to give longer life and better service. You'll find extra performance features built into every Marion unit to assure a dependable lift every time—no matter how rugged your dumping job.

See your distributor or write direct for details on Marion Hoists and Bodies engineered for your particular need.

check these long-life MARION HOIST features:

- Self equalizing double arm lift, with heavy alloy steel castings for crossheads and lift arms.
- Patented lift principle gives a low, uniform oil pressure.
- Sturdily built hoist sub-frame puts more life in your unit.
- All pumps equipped with needle bearings, precision built throughout.
- Safety feature in valve prevents accidental dropping of body.
- Special Marion feature permits mounting on right or left side without additional parts.
- Lifts well ahead of body center when used under standard recommended lengths.

MARION
BODIES AND HOISTS
MARION METAL PRODUCTS CO., MARION, OHIO

SELF-CONTROL STARTS HERE

AND TO RESTORE
ENGINE PERFORMANCE

OIL-CONTROL STARTS HERE

To Stop Oil-Pumping, Replace Worn Engine Bearings

When an engine is sluggish on pick-up and always seems to drag that means oil pumping—and oil pumping means worn connecting rod and main bearings. Worn engine bearings let excess oil reach combustion chambers. It burns to motor fouling carbon on pistons, spark plugs, valves and rings. The best of new rings can't control oil pumping caused by worn bearings. Correction starts where the trouble starts. Always check for and replace worn bearings. To restore power, pep and economy, replace in sets with Federal-Mogul Oil-Control Bearings. They are engineered for the job!

FEDERAL-MOGUL SERVICE
(Division of Federal-Mogul Corporation)
DETROIT 13, MICHIGAN

control oil-pumping where it starts—REPLACE WITH

FEDERAL-MOGUL

OIL CONTROL BEARINGS

World Bestos SCOOP!
BIG RED
SOLVES no. 1 HEAVY DUTY BRAKING PROBLEM!
for Heavy Duty Trucks, Trailers and Buses
BIG RED SWEEPS THE COUNTRY
WB

Guaranteed —

NO FADE

PLUS: *High Friction, Positive Braking . . . Long Life, Reduced Heat Checking*

WORLD BESTOS RED BLOCK *creates SENSATION!*

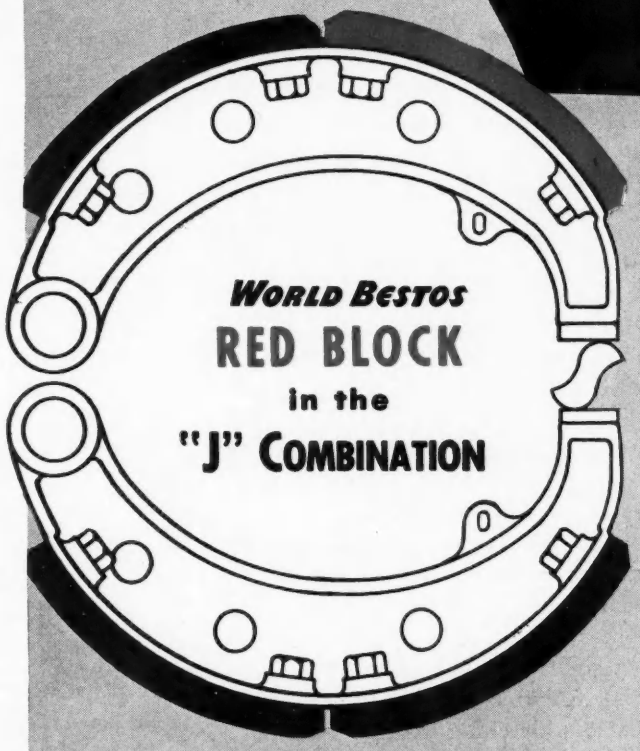
Brakes *can't fade* . . . even with most abusive use under overload conditions! Glazing eliminated! Heat-checking reduced to minimum! It's the amazing new World Bestos RED BLOCK . . . proved by months of testing on toughest truck and bus runs in America. "BIG RED", drivers call it, brings in reports: "Perfect brakes . . . no fade, no heat-check, no glaze!" "45,000 miles and still going strong." "89,000 miles . . . far surpasses any other block used." "Answer to a truck owner's prayer!" "RED BLOCK creating a sensation here!"

Here's How It Works . . .

RED BLOCK, revolutionary new high-friction compound developed by World Bestos, can be used only in right combination with special-friction, World Bestos D Blocks. Resulting "J" Combination is *guaranteed* never to fade . . . *guaranteed* to reduce heat-checking and to give positive brake action . . . long wearing brakes under severest conditions.

"J" Combination Sets Now Available

Complete "J" Combination Sets, with installation instructions, now available to heavy duty truck, trailer and bus operators. Greater safety . . . big savings on maintenance costs apparent in every test case where service is abusive. Specify WORLD BESTOS "J" COMBINATION for original equipment or replacement. If local jobber cannot supply you, write direct to **World Bestos, New Castle, Indiana.**



DISTRIBUTORS . . . JOBBERS:
Get your share of this profitable heavy-duty market . . . with WORLD BESTOS! Write NOW!

WORLD BESTOS

NEW CASTLE, INDIANA

Legislative Outlook

Continued from Page 150

to provide lower fees for those over 8 tons capacity.

SOUTH DAKOTA provided that its 50 per cent reduction in regisration fees shall not apply until a vehicle is five instead of three years old.

WASHINGTON increased its basic license fee from $3 to $5, and the weight fees on trucks about 10 per cent. It also provided a new schedule of fees for trailers, which formerly were registered as trucks.

Proposals to increase registration fees failed of enactment in MICHIGAN, NEW HAMPSHIRE, OKLAHOMA and TEXAS.

SIZE AND WEIGHT—The trend in size and weight proposals is to eliminate formulae and provide gross weights based on spacing between axles, as provided by the Uniform Code and the recommendations of AASHO.

CALIFORNIA increased length limit on urban and suburban buses to 40 ft.

FLORIDA increased the length limit of common or contract carrier single unit vehicles from 35 to 40 ft.

IDAHO passed a new law providing a table of weights based on axle spacing graduated from 30,500 lb if the spacing is 3 ft, to 72,000 lb if the spacing is 56 ft or more.

INDIANA eliminated its formula and provided a maximum gross weight of 72,000 lb; also authorized an axle weight limit of 22,400 lb on so-called "heavy duty" highways designated by the State Highway Commission.

KANSAS eliminated its formula and provided a table of weights graduated from 32.000 lb, if axle spacing is 4 ft, to 63,890 lb, if the overall axle spacing is 44 ft. Maximum length is increased from 45 to 50 ft.

NEW HAMPSHIRE provided a maximum height of 13 ft 6 in.

NORTH CAROLINA increased the maximum gross weight of vehicles having four or more axles to 56,000 lb, and permits up to 5 per cent gross weight tolerance. Vehicles having a gross weight in excess of 50,000 lb must have a piston displacement of 350 cu in. or more.

OHIO adopted a new gross weight formula of 800(L plus 47½), and increased its single axle weight limit from 18,000 to 19,000 lb.

OKLAHOMA increased length of buses from 35 to 45 ft.

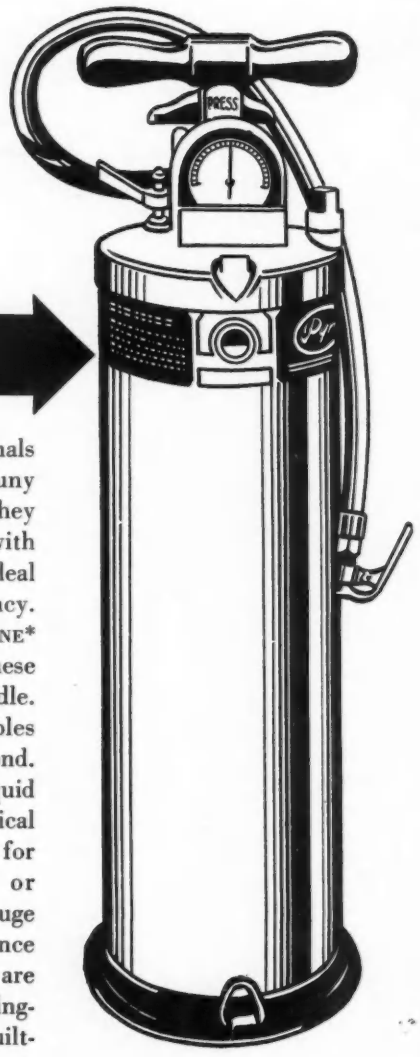
PENNSYLVANIA increased the length of buses from 35 to 40 ft, if equipped with toilet facilities, but provided that those in excess of 35 ft must have at least three axles.

WYOMING eliminated its formula of 850(L plus 30), and provided a table of weights based on axle spacing graduated from 32,000 lb, if the spacing is 4 ft to 73,950 lb, if the spacing is 57 ft.

A bill was defeated in IOWA that would have reduced the maximum

(TURN TO PAGE 157, PLEASE)

THINK BIG about fire protection!



Big buses and trucks—as well as terminals and garages—are big investments. Puny fire protection isn't enough for them. They need big extinguishers . . . the kind with the fire-killing wallop it takes to deal with almost any conceivable emergency.

That means 2 qt. and 1 gal. PYRENE* Vaporizing Liquid Extinguishers. These husky protectors are easy to handle. Stored air-pressure operation enables them to go to work in a split second. They're sure death to flammable liquid fires; they're safe to use on electrical fires. They're instantly adjustable for solid stream, fan-shaped spray, or temporary shut-off. A pressure gauge and a sight glass tell you at a glance they're ready for action. Both sizes are available with either wall or running-board bracket, and with or without built-in hand pump to renew air pressure.

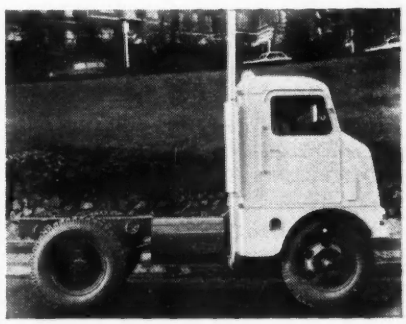
It's good business sense to put these big, sturdy, long-lasting extinguishers everywhere you need them. Ask your PYRENE jobber to show them to you today.

Pyrene's BIG 1 gal. size (above) is for garages, terminals, tank trucks. The BIG 2 qt. size, similar in appearance, is for large trucks and buses. Both are pressure-operated.

*T.M. Reg. U.S. Pat. Off.

PYRENE MANUFACTURING COMPANY
589 Belmont Avenue Newark 8, N.J.
Affiliated with C-O-Two Fire Equipment Co.

Shorts Haul More



New short 1950 Freightliner cab-over-engine truck-tractor featuring an exceptionally short wheelbase permits carriers to haul two 24-ft trailers and still stay within the 60-ft overall length limitations. Unit is powered by Cummins HRB-600 Diesel

Laughing Cavalier by Frans Hals

World Famous Masterpieces

Designing, Developing, Engineering, Manufacturing and Service

Spicer

STANDARD OF THE INDUSTRY

World Famous Masterpieces

Spicer has types and sizes of Universal Joints and Propeller Shafts to meet your particular operating conditions

Spicer Universal Joint models encompass every need from the smallest automobile to giant earthmoving equipment.

Spicer engineers its universal joints with the industry's most practical, efficient mechanical designs. Spicer manufactures this equipment in the industry's most modern and productive plants. Spicer has every facility to attain the highest efficiency in your particular universal joint and propeller shaft needs.

SPICER MANUFACTURING • ***Division of Dana Corporation***
TOLEDO 1, OHIO

46 YEARS OF
Spicer
SERVICE

Legislative Outlook

Continued from Page 154

length for buses with three axles from 40 to 35 ft.

EQUIPMENT—COLORADO passed a law requiring every vehicle which exceeds 30 ft in length to be equipped with four side marker reflectors.

An IDAHO law authorizes the Motor Vehicle Commission to approve the use of reflectors and reflector material in lieu of lights or lamps.

A NEW JERSEY law defines the term "safety glazing material" to mean safety glass, plastics or other materials used for the purpose of safety in glazing.

ALABAMA, KANSAS, MAINE, MASSACHUSETTS, MINNESOTA, NEBRASKA and NEW YORK authorized red emergency reflectors, to be carried by buses and trucks, in lieu of flares or fusees.

NEW YORK also will prohibit operation of motor vehicles manufactured after January 1, 1952, unless equipped with mechanical directional signals.

OREGON repealed its provisions for inspection of motor vehicles.

TOLL ROADS—As in previous years. there was considerable agitation for toll road authorizations.

COLORADO passed a law providing for the cost of the toll turnpike project to be defrayed by bond issues, with up to 30 per cent of the annual cost pledged from highway user revenue.

Organization of "municipal corporations" to construct and operate toll roads is authorized by legislation enacted in NORTH CAROLINA.

OHIO created a Turnpike Commission to construct and operate toll road projects.

NEW JERSEY passed legislation defining the main route of its first toll road from New York state line to the Delaware River, near Deepwater.

PENNSYLVANIA authorized extensions to connect with the existing Turnpike.

Toll road proposals were defeated in ALABAMA, MASSACHUSETTS, MICHIGAN, MINNESOTA, NEBRASKA, RHODE ISLAND and WISCONSIN, while a proposal is still pending in MISSOURI.

UNIFORM LAWS—Much progress has been made toward uniform motor vehicle laws through the adoption of important parts of the Uniform Code by at least 25 states this year. OKLAHOMA, SOUTH CAROLINA and UTAH enacted substantially all of Act V. In 35 states, the comparison workbooks provided by NHUC are being used.

MICHIGAN recodified and renumbered its motor vehicle laws to conform more closely with the sequence of the Uniform Code.

RECIPROCITY—INDIANA passed a law to validate reciprocal agreements made by the Reciprocity Commission.

MARYLAND authorized the Gover-

(TURN TO PAGE 158, PLEASE)

"If we didn't stress courtesy in our organization so much, I'd call you the stupidest, most inconsiderate jerk of a driver I ever saw!"

A TRUCK BODY IS NO BETTER THAN ITS HARDWARE...

Body by Quality Equipment & Supply Co., Inc., Charlotte, N. C. Locks, Hinges and Door Holder by Eberhard.

That's why E **LONG RUN TRUCK BODY**

HARDWARE by EBERHARD

is used on More of the Better Bodies

● The vast majority of sound, firmly established body builders have learned to rely upon Eberhard Long Run Truck Body Fittings to meet their general or specific requirements. They know "A Truck Body is No Better than its Hardware"... Consequently they build with the best... Circle E.

The Eberhard catalog serves as a guide to wise purchasing. You'll find it helpful and informative.

Hundreds of items to fill the body builders needs are clearly illustrated and described in the New Catalog.

Write for the NEW EBERHARD CATALOG TODAY.

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EBERHARD MANUFACTURING CO.

Division of the Eastern Malleable Iron Co. EVARTS AVE. CLEVELAND, OHIO

at LOWER COST-PER-MILE, too

Hunt-Spiller Brake Drums are now being made of a new Gun Iron alloy which eliminates heat-checking in all but the most severe cases and at the same time equals or surpasses the wear-life of previous Gun Iron drums. In addition, in most instances, these drums take the squeal out of heavy-duty braking.

Hunt-Spiller pioneered the first cast brake drum over twenty years ago . . . a Gun Iron drum that wore so well it shortly was adopted and preferred by the bus and truck industry. This *new* material, an alloy of Gun Iron, is the result of years of research in the Hunt-Spiller laboratories to increase wear-life and particularly overcome the serious problem of heat-checking. On-the-road performance records prove the success of that research.

Hunt-Spiller drums are made to original equipment specifications for most busses and trucks. They are accurately machined for easy, kink-free installation; fully guaranteed. For complete details send for new descriptive bulletin which includes some outstanding results reported by users.

HUNT-SPILLER GUN IRON • HSGI • AIR FURNACE PROCESS

HUNT • SPILLER

MANUFACTURING CORPORATION

AUTOMOTIVE DIVISION

399 DORCHESTER AVENUE • SOUTH BOSTON 27, MASS.

Legislative Outlook

Continued from Page 157

nor to enter into reciprocal agreements whereby motor vehicles owned by residents of another state and registered in such other state, but operated by residents of Maryland, may for an unlimited time be operated in Maryland without being required to register.

A resolution in MONTANA requests the Registrar of Motor Vehicles to exercise its reciprocal agreement power to exempt Montana motorists from registration and licensing in another state until February 1st.

NEW MEXICO amended its reciprocity law to include non-residents who operate for-hire between fixed termini.

A WASHINGTON measure authorized the Director of Licenses to enter into agreements with fleet operators engaged in interstate commerce. The percentage of miles that fleets operated in Washington related to the total miles such fleets operated would be used to determine what per cent of the total number of vehicles in a fleet must be registered in Washington. Another measure enacted in Washington authorizes the issuance of a permit for a single trip into the state for a fee equal to 1/12 of the annual fee charged by the state.

OREGON amended its reciprocity law providing for similar provisions as the first-mentioned Washington law.

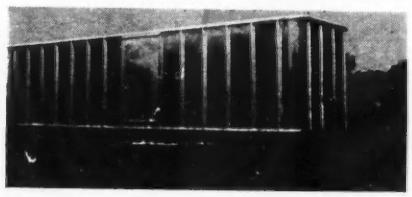
END

(Please resume your reading on P. 74)

JOBSERVATION

People who view things with alarm usually alarm things with their views

GINDY Easily Maintained



GINDY aluminum semi-trailer, manufactured by GINDY Manufacturing Co., Downingtown, Pa., features high tensile steel frames, easily replaced post and side sheet, Austin landing gears, Timken axle and Westinghouse brakes

"BEAR"330 HEAVY-DUTY DY-NAMIC WHEEL BALANCER checks Static and Dy-Namic unbalance in one operation. Quickly and accurately shows the position and amount of un-balance.

"BEAR" 240 DRIVE-OVER WHEEL ALINEMENT TESTER. The only Tester which correctly tests for alinement while the car is being driven over it.

no matter what size your operations . . .

. . . 2 Periodic "BEAR" Tests will CUT Your Operating and Maintenance COSTS!

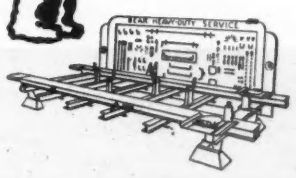
EQUIPMENT FOR EVERY SIZE SHOP!
Write for a Free copy of the new "Bear" Catalog! It shows you a wide variety of precision wheel balancing and alinement equipment to cover every need!

Whether you have three vehicles, a hundred, or more—periodic "Bear" Wheel Balancing and Alinement Tests will enable you to save real money on operating and maintenance costs! With proper Dy-Namic Wheel Balancing and Alinement, you can cut tire wear by 50% or more! You can cut costly front-end parts replacement, minimize driver fatigue, increase safety, reduce load breakage caused by excessive vibration and cut costly out-of-service layups! You can do all this whether you service your own equipment or not. If you own ten or more vehicles, you may find it economical to do your own testing. If your operations are larger, you may find it more economical to do both test and correction work in your own shop. But . . . no matter what size your operation . . . your "Bear" Jobber or Representative will be glad to help you work out the methods best suited to your particular needs. See your Bear Jobber TODAY or write: BEAR MFG. CO., Dept. C-3, Rock Island, Illinois.

"BEAR" SAFETY SERVICE

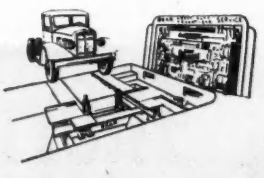
Trade Mark Reg. U. S. Pat. Off.

R-6000

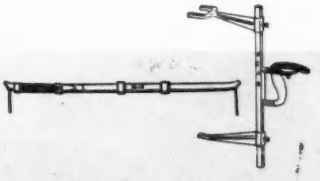


COMPLETE ALINEMENT & FRAME STRAIGHTENING SERVICE is available for large fleet operators with equipment like the "Bear" 900-830 Service. This extra rugged heavy-duty service handles all alinement and frame operations on cars, trucks, buses and tractors.

FLEET OPERATORS CAN INCREASE NIGHT DRIVING SAFETY by checking the headlights on all equipment with the "Bear" 555 Headlight Tester. This modern tester tests lateral aim, beam elevation and light output volume. Operation is simple and quick.



FOR SHOPS WITH LIMITED SPACE a "Bear" Front-End Alinement Service like the 3840-830 is often the ideal solution. In a space 14½' wide by 10½' long, you can do complete inspection and correction work on front axles, rear housings and wheel alinement.



LOW COST PRECISION GAUGES like the "Bear" Caster-Camber-King Pin Gauge and the "Bear" Center Line Toe-In Gauge enable smaller operators to do fast, accurate checking of wheel alinement. "Bear" now offers a variety of precision gauges to meet every service need.

Mechanical Failures Cause Accidents

Continued from Page 101

trailer tire failures resulted in fires due to blowout of one of a pair of duals with subsequent overheating as a result of operating on a "flat."

Accident Trends

The analysis, in brief, indicates that: (1) the trend toward an ever-increasing number of mechanical defect accidents appears to have been halted; (2) as a percentage of all reported accidents, mechanical defect accidents have been on a downward trend ever since 1944; (3) operators of buses are showing substantially better records and progress in reducing the number of such accidents than are property carriers; (4) mechanical defect accidents are, in comparison with the generality of accidents, slightly more likely to result in a fatality or injury and result in twice as much property damage; (5) brake failures are causing an ever-increasing percentage of mechanical defect accidents; (6) "stopped" accidents are decreasing, both numerically and percentagewise, but these accidents which number only one-sixth of all mechanical defect accidents cause over half the fatalities; and (7) the chief cause of mechanical failures, and almost the only cause, is lack of adequate inspection and maintenance.

Steering, Lighting, Fuel Lines

Steering defects totalling 75 again surpassed wheel failure accidents as the fifth most frequent cause of accidents. Ball and socket joint failures cause approximately one-third of such accidents. All but one of the 81 steering accidents occured while the vehicle was moving. Relatively few deaths resulted due to the sudden nature of the occurrence.

About one-third of the lighting system failure accidents are of the "parked" or "stopped" type. Short circuits, chiefly under the dash or the cab continue to be the predominating cause. Light defect accidents are characterized by high property damage rate. This is due to the relatively frequent number of fire accidents due to this cause. Out of the 69 reported accidents, 25 involved fires, and of these, eight had damage in excess of $5000. and this eight had almost 40 per cent of the damage in this category. Only two out of the 69 accidents involved buses.

Over half the fuel line accidents involved fires. A high percentage of these were of the "Stopped" type. This is due to the fact that a fuel defect, such as a broken line disables the vehicle on the spot, and that spot is most often on the highway itself. Reports show a material decrease in broken lines, and a decrease in defects in the fuel itself such as dirt and water. More trouble occurred with parts such as leaks, valves and breakages. The number of bus accidents due to fuel line failures comprises less than one-seventh of all mechanical defect fuel line accidents.

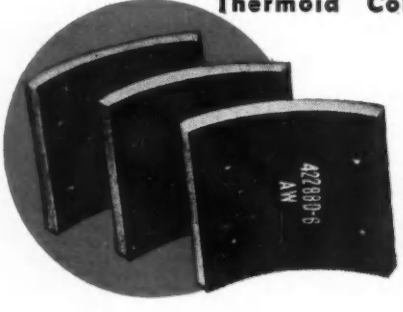
END

(Please resume your reading on P. 102)

"Just What You'd Expect"

You'd expect Thermoid Heavy Duty Brake Blocks to stand up under high operating temperatures—and have uniform friction combined with exceptionally long life—wouldn't you? Certainly—because Thermoid is known everywhere for leadership in efficient, economical brake maintenance. Thermoid Heavy Duty Brake Blocks are the result of extensive engineering developments and exhaustive field tests. They meet the most rigid state stopping-distance laws. They operate efficiently in wet or slushy conditions. They will not score or wear drums and they provide maximum safe stopping at minimum cost per mile. You *expect* the best—you *get* the best—when you specify *Thermoid*.

Thermoid Company • Trenton, New Jersey



Thermoid

Brake Linings • Clutch Facings • Fan Belts • Radiator Hose • Hydraulic Brake Parts and Fluid • Car Mats • Thermoid Precision Process Equipment.

"Must be a good place to eat—see—all the truck driver's eat here."

You Can't Miss

WITH PACKARD AUTOMOTIVE CABLE

Packard cable is the *sure shot* answer to all your wiring requirements. It's the best there is . . . chosen as standard equipment on more cars, trucks and buses than any other make. Packard cable is widely distributed, nationally known. It's easy to stock, easy to sell. The clearly marked cartons give you complete size, gauge and application data at a glance . . . are self-displaying, keep cable clean and ready for instant use. Order Packard cable and be sure of hitting the mark with the right size cable for the right job every time.

PACKARD CABLE—
Tops for Every Requirement

LOW TENSION CABLE—The new and improved Packard low tension cable gives definitely superior performance . . . is tougher . . . lasts longer—at no increase in price.

HIGH TENSION CABLE—Packard's Four-Forty and Lac-Kard high tension cables are known for dependable performance on every make and model vehicle in every type of service. Available in spools and sets.

BATTERY CABLES—Packard full-size battery cables assure fast cranking and quick starts, together with long life. They are available with your choice of the LeadAlloy terminal or the leaded brass terminal.

Packard
REG U.S. PAT. OFF.
TRADE MARK

Packard Electric Division, General Motors Corporation
Warren, Ohio

FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING

FREIGHT ELEVATOR BUYER'S GUIDE, a 44-page booklet describing with illustrations the basic considerations involved in the selection of freight elevators and parts, can be obtained by writing Westinghouse Electric Corp., Jersey City, N. J.

SPARK PLUG CATALOG, a 28-page booklet listing the specifications for all types of American engines and some European engines in current use, has been made available along with an 8-page international edition for export, by the Electric Auto-Lite Co., Toledo, Ohio.

SCREW AND WASHER CATALOG a 28-page illustrated booklet describing "Sems" lock washer screws in various head styles can be obtained by writing for No. 80-A from Pheoll Manufacturing Co., Chicago, Ill.

HOW TO RUN A LATHE, a 128-page book, revised 49th edition of the lathe operator's handbook is available for 25 cents for paper binding or $1 for imitation leather cover from the South Bend Lathe Works, South Bend, Ind.

WINTERSET, a descriptive bulletin listing the product features in detail of the 100% glycol base permanent anti freeze, may be obtained from Stone Distributing Co., Coshocton, Ohio.

HYDRAULIC CYLINDRICAL GRINDERS, a 23-page catalog, illustrates, describes and contains specifications for Landis 12-in. type CH Universal grinders. Write Landis Tool Co., Waynesboro, Pa.

DIESEL ENGINES, described in two bulletins containing installation drawings, photographs and charts in addition to general specifications, can be obtained from Cummins dealers or write Cummins Engine Co., Inc., Columbus, Ohio.

FORK TRUCK AND TRACTOR CATALOGUE, containing pertinent facts necessary to a preliminary consideration of material handling machines can be had by writing Clark Equipment Co., Battle Creek, Mich.

BATTERY CATALOG, a 24-page full color bulletin features the complete line of batteries for auto, bus, truck, tractor, marine and Diesel service in addition to battery testers, fast chargers, slow and trickle chargers, and the Edison selector chart. Write Thomas A. Edison, Inc., West Orange, N. J.

AUTOMOTIVE TIMING CHAINS, bulletin 49-5 contains 11 pages describing automotive timing chains problems, their solutions, and the need to replace worn chains promptly. Well illustrated, it can be obtained by writing Chain Belt Co., Milwaukee, Wis.

HYDRAULIC TRUCK TOWER, bulletin No. 1829P2, describes with illustrations a telescopic tower useful in overhead work. Write Silent Hoist & Crane Co., Brooklyn, N. Y.

PLAY SAFE
DON'T DRIVE WITHOUT
Signal-Stat
DIRECTIONAL SIGNALS
STANDARD EQUIPMENT ON NATIONALLY ADVERTISED TRUCKS . . . .
THE ONLY DIRECTIONAL SIGNAL WITH THE
BURN-OUT-PROOF SWITCH
Favored because of their dependability and safety by both owners and drivers, Signal-Stats offer protection under all sorts of operating conditions. Approved by American Association of Motor Vehicle Administrators (AAMVA) and States requiring directional signals.
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GENUINE

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NEW SERVICE DIVISION HEADQUARTERS NOW LOCATED AT HOLLAND, MICH.

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GENUINE BOHNALITE PRODUCTS

- Pistons
- Engine Bearings
- Reconditioned Connecting Rods
- Rebabbitted Connecting Rods
- Piston Pins
- Water Pumps
- King Bolts
- Valve Springs
- Rod Dippers
- Water Tubes
- Babbitt Metal
- Bolts
- Nuts
- Shims
- Solders

Genuine *BOHNALITE* Connecting Rods, As Well As All Other *BOHNALITE* Products Are Superior . . .

When you order *GENUINE BOHNALITE CONNECTING RODS*, or any of the many other *GENUINE BOHNALITE PRODUCTS* in the complete line of replacement parts, you are assured of a superior quality and performance. *BOHN* quality is backed by 35 years of accumulated experience in the development and eleven-plant production of original equipment parts for leading manufacturers of cars, trucks and buses!

GENUINE BOHNALITE CONNECTING RODS instantly available in either reconditioned or rebabbitted types, possess all the superior qualifications for lasting satisfaction, including complete accuracy between centers, diamond-bored bushings, accurate alignment, and over-all precision inspection! (For insert types, order insert bearings with rods.)

BOHN ALUMINUM & BRASS CORPORATION

Executive Offices • Detroit 26, Michigan

Service Division, Holland, Michigan

10 Steps Predict Road Performance

Continued from Page 84

ysis. Accuracy of the prediction obtained by the application of this principle depends upon the validity of the empirical data for the various resistances. The nature of these prevents simple independent determinations, and each is subject to variations which are characteristic to both vehicle and operating variables. Since the resistance equations which will be given below are based upon limited test data and conclusions drawn from a study of published sources, they should be regarded as hypotheses which are to be modified as better information on vehicle resistance is obtained.

It appears that the most convenient manner of solving the grade climbing ability at a given road speed is by means of a tabular computation sheet. Such a form is shown by Fig. 1. It is arranged to aid in selecting the necessary data pertaining to the vehicle and operating conditions, as well as to help complete the grade ability calculation.

Where a rapid and ready solution is desired, the computation can be reduced to seven simple operations with the aid of the charts and tables which are included.

Charts and tables have been drawn to eliminate the need of all engineering formulas, and only simple computations are necessary.

Step No. 1

Chart No. 1 determines the road speed for a given engine rpm, or conversely, the engine rpm corresponding to a given road speed for 20-in. base tires. The theoretical road speed in this example is 43 mph, which is obtained from the chart, using the given tire size, axle ratio, and engine speed.

Step No. 2

Power output of gasoline engines is generally specified for sea level operation and decreases as the altitude increases. Sea level horsepower at 2800 rpm from manufacturer's curve is 112. Table and Formula No. 2 permits filling into line two the correct power for altitude. (112 x .80 = 89.6)

At or near sea level, this correction is not necessary, and this line will be the certified net engine horsepower at the engine rpm. (For gasoline engines only. Information on diesel engines is not available.)

Step No. 3

Rolling resistance is a function of road type and condition, gross weight, tires, vehicle, and road speed. In this analysis it is convenient to treat that pertion of rolling resistance which varies with road type and condition separately as a deduction from the grade climbing ability, and therefore, the element of rolling resistance which depends upon the weight, speed, and vehicle can be taken from Table No. 3 and entered in line three. In this case,

$$\frac{1.315 \times 21000}{1000} = 27.6$$

Step No. 4

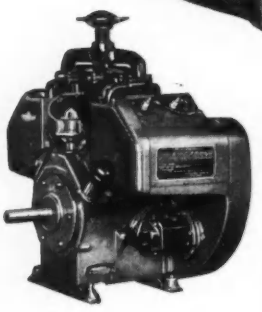
Knowing the height and width of the vehicle, select the area factor from Table No. 4A and multiply by the velocity constant from Table No. 4B to get air resistance horsepower and fill in line four. (.213 x 199 = 42.4)

Step No. 5

Fill in line five showing chassis fric-

(TURN TO PAGE 166, PLEASE)

This tractor-trailer conditioner unit is powered by a Model VE-4 Wisconsin 4-cylinder engine.



Body builders, refrigeration engineers and fleet owners alike, who are familiar with Wisconsin Heavy-Duty Air-Cooled Engines, have a keen appreciation of such advantages as:

DEPENDABLE AIR COOLING. No cooling problems at any temperature from sub-zero to maximum summer or tropical heat.

COMPACT DESIGN. Wisconsin Engines are readily adaptable to available space allocations without sacrificing payload area. V-type design of 4-cylinder models assures an extremely compact power package.

HEAVY-DUTY SERVICEABILITY. The crankshaft of every Wisconsin Engine carries Timken self-cleaning *Tapered Roller Bearings at both ends* to take up end thrusts and radial loads, permitting direct drive from the extended crankshaft without need for a separate thrust or outboard bearing. We have yet to hear of a single case of Wisconsin Engine bearing failure.

ROTARY TYPE, HIGH TENSION OUTSIDE MAGNETO, equipped with Impulse Coupling, for smooth, steady ignition, easy starting in any weather, and minimum servicing.

Wisconsin engineers will be glad to work with you in planning your Refrigeration and Conditioner Power installations. Let us have a look at your blueprints and specifications and see what we can come up with.

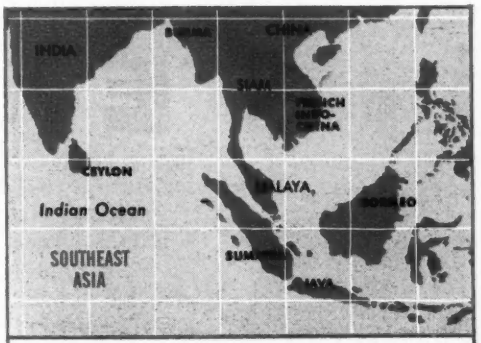
WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 14, WISCONSIN

To Help Close "The Dollar Gap"

NATURAL RUBBER GROWERS SET UP BUREAU TO EXPAND U. S. MARKET

Every leading American statesman and economist — including in recent weeks President Truman, Secretary of State Acheson, and "Marshall Plan" Administrator Hoffman — have been urging overseas countries to sell more goods to the U. S.

They point out that Marshall Aid cannot go on forever, that the present un-balance of trade between the U. S. and other countries leads to economic chaos, and that it is undesirable to achieve a balance of trade by cutting down on U. S. exports.



REAL RUBBER FACTS

Natural rubber is the No. 1 dollar-earner for sterling countries.

• • •

In 1949, the United States imported about 600,000 tons of natural rubber from Southeast Asia.

• • •

Natural rubber is now selling below pre-war prices. Its production and price are unrestricted and unsubsidized.

Natural rubber is the key to the prosperity of Southeast Asia — including over 400,000 independent rubber farmers in Malaya alone.

• • •

In addition to being the chief ingredient for tires, natural rubber has a growing market in latex foam cushioning and a great potential market in rubber roads.

Only One Answer

So they *all* come to the *same* conclusion — that the only answer is for the U. S. to IMPORT MORE GOODS!

And — they ALL AGREE that the real answer is for industries in other countries to do a better *SELLING JOB* in the U. S. — to study U. S. markets, to advertise, to merchandise their products.

And it is for just such purposes that the leading dollar-earner of all the industries in the sterling area — the rubber producer — has set up the Natural Rubber Bureau in the U. S.

To Promote New Uses

The British Rubber Development Board, representing these rubber growers of Southeast Asia, has established the Natural Rubber Bureau in Washington, D. C. to promote new uses for natural rubber in the U. S. A.

Natural rubber alone earned nearly as many dollars for the sterling area last year as did all of Britain's manufactured goods.

And this was in spite of the fact that natural rubber was selling to American rubber manufacturers this past year at *less than pre-war* prices — while every other major agricultural product in the world was selling at *two or three times* pre-war costs.

And the natural rubber producers are going about expanding their market in the American way — by market research, by advertising, by promoting their product.

They are trying to sell more in the U. S., to earn more dollars to close the gap, to make Marshall Aid less needed, to make it possible for other countries to buy more U. S. goods, and to achieve a stability and prosperity among free nations.

Full page advertisements will appear in leading national consumer magazines to promote such new uses for natural rubber as rubber roads, latex foam cushioning, etc.

Natural Rubber Bureau

1631 K St., N. W., Washington 6, D. C.

Natural Rubber

Nature and Science Serving Mankind

This booklet, "Stretching Highway Dollars With Rubber Roads," is being offered in current consumer advertising. Write for your free copy today to Dept. C3, NATURAL RUBBER BUREAU, 1631 K St., N.W., Washington 6, D. C.

Road Performance

Continued from Page 164

tion power from Table No. 5. The gross weight to be used in establishing the chassis friction horsepower is that of the *driving unit only;* the weight on trailer axles, if used, is not included.

Chassis friction is the power absorbed in the vehicle components; namely, the clutch, transmission, propeller shaft, and driving axle. The chief factors determining the amount of power used up by chassis friction are the engine speed and the size of chassis units. Since there is a general agreement between the gross vehicle weight rating and size of the transmission, rear axle, as well as other driving components, the gross vehicle weight rating was selected as one of the variables used for estimating chassis friction power. Only the gross weight rating of the truck as a single unit was chosen. Although the total gross weight is greatly increased by the use of trailers or semi-trailers, the size of chassis units remains unchanged and the added weight has but little effect upon chassis friction. The gross weight used in applying Table No. 5 is that of trucks and tractors only; it never includes the weight on semi-trailer or trailer axles. However, that portion of a semi-trailer which loads the fifth wheel is included. It is recommended as a general rule that chassis friction power be calculated from the maximum GVW rating of the truck regardless of the load actually carried, or whether it is used as a tractor. This table is intended to apply with best accuracy to vehicles in the medium gross weight class, of from 10,000 to 30,000 lb GVW. Values outside this range are shown, but should be used with caution as they may show considerable deviation from actual chassis friction horsepower. This chart is based on limited information; nevertheless, it is the best available at present and it is hoped that future research and tests will develop more reliable values.

Rolling and Air Resistance Power

Road Speed, MPH	30	35	40	45	50	60
Rolling Resistance Power	17.3	21.1	25.1	29.4	33.8	43.7
Air Resistance Power	14.4	22.9	34.1	48.5	66.6	115
Resistance Power	31.7	44.0	59.2	77.9	100.4	158.7

Step No. 6

The sum of lines three, four, and five is the power absorbed by the vehicle at the theoretical road speed in line one when operating on the level. It is written into the space provided in line six.

Step No. 7

By subtracting line six from line two, the net power available to climb grades is obtained and put in line seven.

Step No. 8

For convenience in completing the solution, the net grade power per 1000 lb gross weight should be determined and entered in line eight. This is easily found by using Table No. 6.

Step No. 9

The grade climbing ability for Class I roads in good condition can now be found from Chart No. 7. To read this chart find the road speed on the bottom scale and the grade horsepower

(TURN TO PAGE 168, PLEASE)

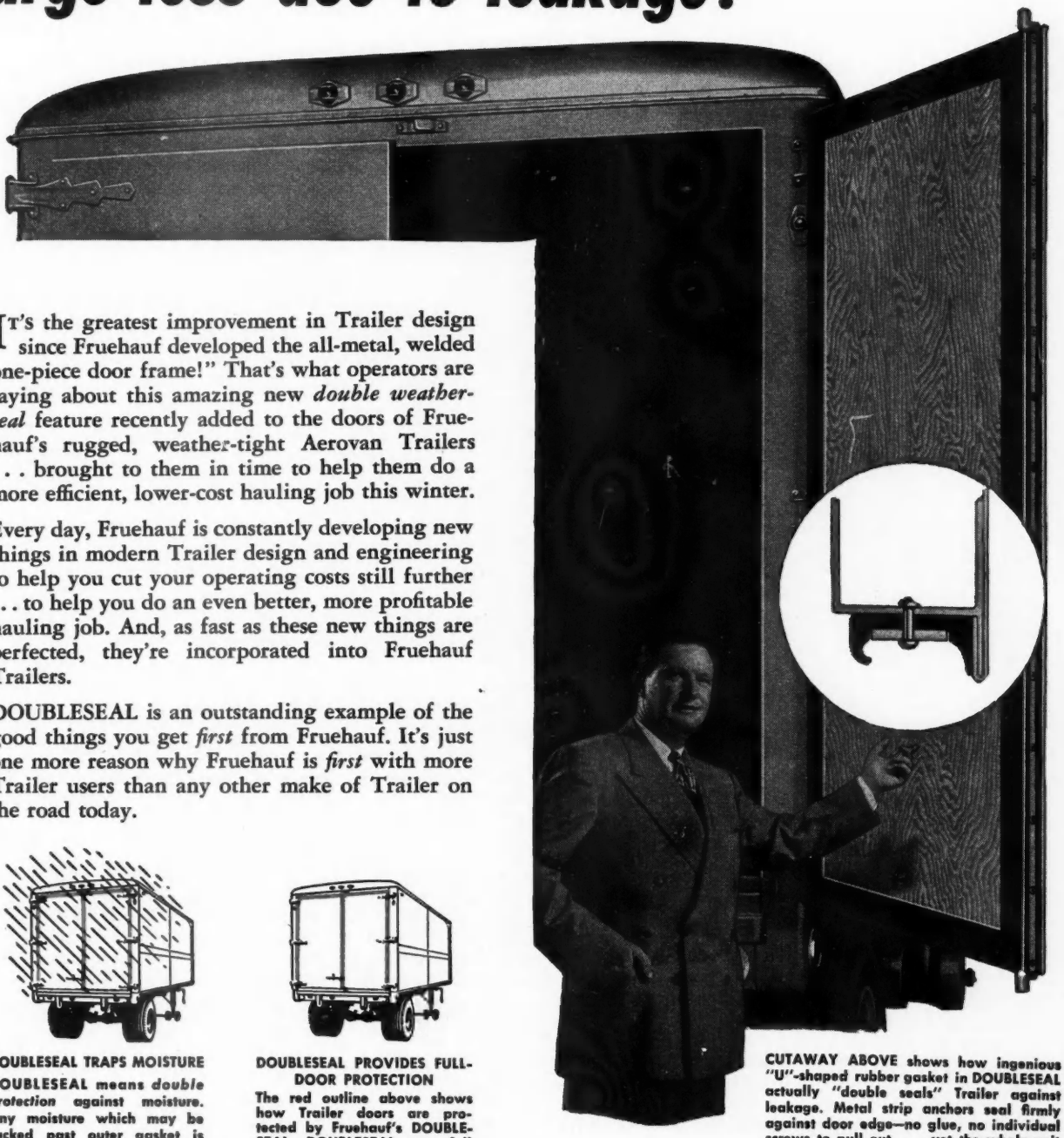
MORE FOR YOUR MONEY

GUNITES deliver more miles per dollar invested. They reduce operating costs by eliminating breakage, by reducing frequency of adjustments and service, and by giving better braking efficiency and longer life. Skilfully engineered designs and material eliminate flex on cam and anchor sides, provide self-lubrication, prevent burned spots. A trial set of GUNITES on a tough run will quickly demonstrate their over-all economy and value. Buy GUNITES — *for better braking!*

MADE BY GUNITE FOUNDRIES ROCKFORD, ILLINOIS

GUNITE BRAKE DRUMS . . . FOR TRUCKS, TRACTORS, TRAILERS *and* BUSES

"DOUBLESEAL"-new Fruehauf door feature, provides DOUBLE PROTECTION against cargo loss due to leakage!



"IT'S the greatest improvement in Trailer design since Fruehauf developed the all-metal, welded one-piece door frame!" That's what operators are saying about this amazing new *double weather-seal* feature recently added to the doors of Fruehauf's rugged, weather-tight Aerovan Trailers . . . brought to them in time to help them do a more efficient, lower-cost hauling job this winter.

Every day, Fruehauf is constantly developing new things in modern Trailer design and engineering to help you cut your operating costs still further . . . to help you do an even better, more profitable hauling job. And, as fast as these new things are perfected, they're incorporated into Fruehauf Trailers.

DOUBLESEAL is an outstanding example of the good things you get *first* from Fruehauf. It's just one more reason why Fruehauf is *first* with more Trailer users than any other make of Trailer on the road today.

DOUBLESEAL TRAPS MOISTURE

DOUBLESEAL *means double protection* against moisture. Any moisture which may be sucked past outer gasket is trapped in a drainage trough . . . prevented by inner gasket from penetrating Trailer.

DOUBLESEAL PROVIDES FULL-DOOR PROTECTION

The red outline above shows how Trailer doors are protected by Fruehauf's DOUBLESEAL. DOUBLESEAL runs full length of doors (top to bottom) . . . full width (across top of doors.)

CUTAWAY ABOVE shows how ingenious "U"-shaped rubber gasket in DOUBLESEAL actually "double seals" Trailer against leakage. Metal strip anchors seal firmly against door edge—no glue, no individual screws to pull out . . . yet the whole unit is easily removed for replacement of damaged or worn seal.

World's Largest Builders of Truck-Trailers

FRUEHAUF TRAILER COMPANY

DETROIT 32 • LOS ANGELES 11

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80 Factory Service Branches

FRUEHAUF Trailers

Continued from Page 166

per 1000 lb gross weight on the right scale. Where these intersect, the grade is read on the diagonal lines.

Step No. 10

A modifying factor for road type and condition is taken from data at top of form sheet (Road Factor), entered in line ten and subtracted from line nine. The result is the grade climbing ability for the desired conditions of operation at the theoretical road speed. This result is to be written in line eleven.

Power Delivered

7.1 Rear Axle Ratio

Road Speed, MPH	30	35	40	45	50
Engine RPM	1865	2180	2490	2800	3100
Net Engine Power	88	99	108	112	*108
Net HP Corrected for Alt.	70.5	79	86.5	89.5	86.5
Chassis Friction Power	8.8	10.2	11.5	12.8	14.1
Delivered Power	61.7	68.8	75	76.7	72.4

*Extrapolated from curve.

General

The net grade climbing power will be zero if the vehicle has just enough power to develop the theoretical road speed on the level; therefore, as long as it is zero or more, the theoretical speed can be attained.

Conversely, whenever the net grade climbing power results in a negative quantity, it is apparent that the power available is insufficient to meet the requirements of the various resistances.

B. Maximum Vehicle Speed at Zero Grade & Zero Acceleration

It has already been indicated that the maximum speed is attained when the power developed and power absorbed by resistances are equal. This speed can be established with, perhaps, the least effort by plotting a curve of resistances and another of power delivered. It may be convenient to use the sum of rolling and air resistance for one, and net power corrected for altitude less chassis friction for the other. In order to make this clear the same vehicle data used at the beginning of this paper will again be the basis of an example. In this case the rear axle ratio is selected as 7.1. Rolling resistance and air resistance power is determined for several road speeds from the formulas and tables. Power delivered is found for similar road speeds. The two following tabulations show how to arrange this for convenient handling. In selecting horsepower points from the net power curve, it became apparent that rolling and air resistance had been tabulated beyond the engine speed range.

Instructions for the determination of these tabulations:

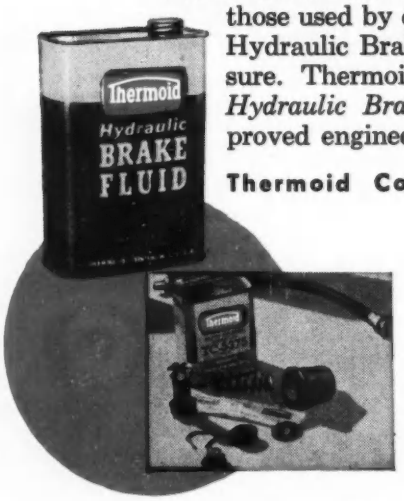
1. Select an arbitrary series of road speeds, some values should be both above and below the probable maximum road speed.
2. Find rolling resistance power for each speed from Table No. 3 as explained in Step No. 3.
3. Find air resistance power for each speed from Tables No. 4A and 4B as explained in Step No. 4.
4. The resistance power for each speed is the sum of 2 and 3.

(TURN TO PAGE 170, PLEASE)

"Works Best Under Pressure"

Thermoid Hydraulic Brake Fluid is compounded from the highest quality ingredients to meet or exceed SAE specifications. Thermoid Hydraulic Brake Fluid is fortified with corrosion inhibitors—will not harm rubber or metal parts—will not swell rubber cups—operates satisfactorily at temperatures from 60° below zero to 230° F., and mixes well with all recognized quality fluids, including those used by car manufacturers. Specify *Thermoid* Hydraulic Brake Fluid. It works best under pressure. Thermoid also makes a *complete* line of *Hydraulic Brake Parts*—made according to approved engineering specifications and fully tested.

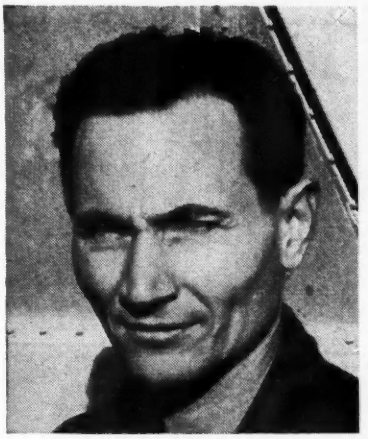
Thermoid Company • Trenton, New Jersey



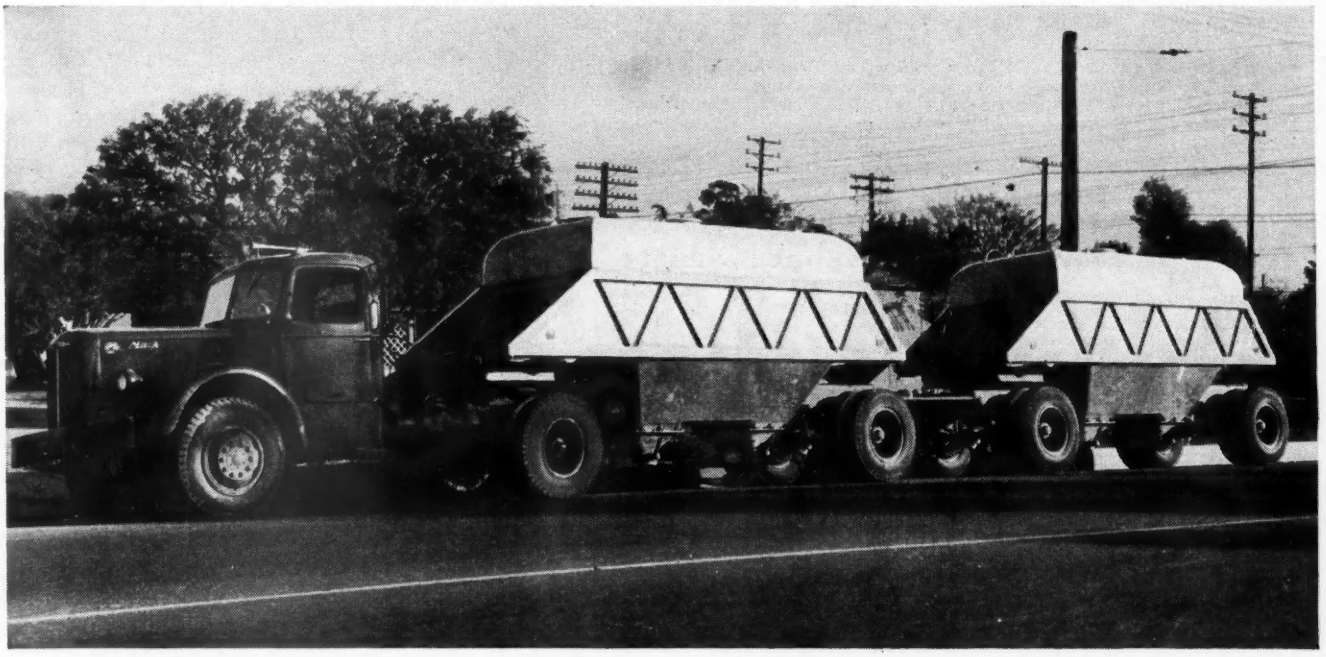
Thermoid

Brake Linings • Fan Belts • Radiator Hose • Hydraulic Brake Parts and Fluid • Car Mats • Clutch Facings • Thermoid Precision Process Equipment

"Aluminum bulk haulers doubled my profits"



WRITES CONTRACT CEMENT HAULER CHET BASE, POMONA, CALIF.



— **CHET BASE** (above, right) uses bulk haulers to deliver dry cement throughout Southern California. His units must often travel 400 miles on a single trip—over mountain and desert terrain, on "wash-board" roads. He uses trains built of Kaiser Aluminum—like the one above —in addition to trains built of steel. After using them for a year, the rugged *aluminum* units were in better condition than the steel trains.

"It may sound unbelievable, but it's true," he continues. "I have to carry 45,000 pounds of payload every trip in order to break even. Under California gross weight laws, the most I can carry in my heavier steel units is 48,400 pounds—a net of 3,400 profit pounds.

"But with bulk haulers made of Kaiser Aluminum I can carry 52,020 pounds—7,020 revenue pounds above expenses. That's *twice* what I get with the steel bulk haulers!

"Each of my trains averages 18 deliveries a week. On a basis of 3,620 pounds more payload per trip, each aluminum unit brings me 3,388,320 *additional* profit pounds a year.

"Customers like the aluminum units, too. Truck arrivals upset their schedules, so the bigger loads mean fewer interruptions.

"Cement hauling is a low-rate, close-margin business. Every pound of dead weight saved by aluminum is *worth more than $1.00 of net revenue per year!*"

If you carry bulk or sacked cargo, you'll make more money with bulk haulers built of Kaiser Aluminum. They'll give you extra payload, lower maintenance costs! Contact our nearest office today for immediate, profitable information.

Kaiser Aluminum is produced by the Kaiser Aluminum & Chemical Corporation.

Kaiser Aluminum

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"They're lined up for miles since I started shoeing them with slip-resistant 4-WAY Safety Plate."

For greater safety under foot, in your plant and on your products

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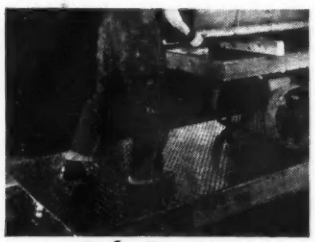
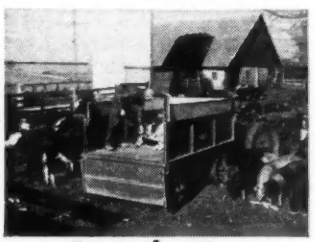
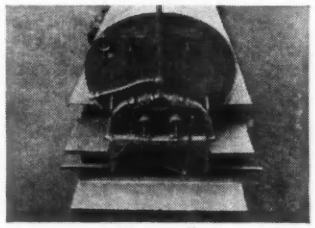


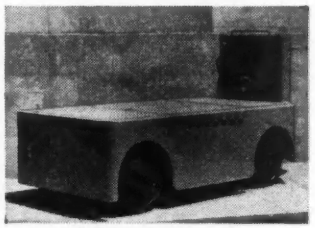
Safe Footing



Easy Cleaning



Firesafe



Adds Strength

INLAND

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New Bulletin with New Ideas — Just Out! Bulletin Fl. Complete engineering and application data. Send for it!

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Road Performance

Continued from Page 168

5. For each road speed find the corresponding engine rpm using Chart No. 1.
6. Net engine power is taken from manufacturer's curve.
7. The net engine power is corrected for altitude with the aid of Table No. 2 as explained in Step No. 2.
8. Chassis friction power is taken from Table No. 5 as explained in Step No. 5.
9. Delivered power for each road speed is found by subtracting 8 from 7

This information is plotted (Chart 1) and results in the characteristic curves which solve the problem within the accuracy of the assumed and observed data. Their intersection gives the maximum possible speed of nearly 45 mph. This solution is for a particular vehicle with predetermined gearing, load, and operating conditions.

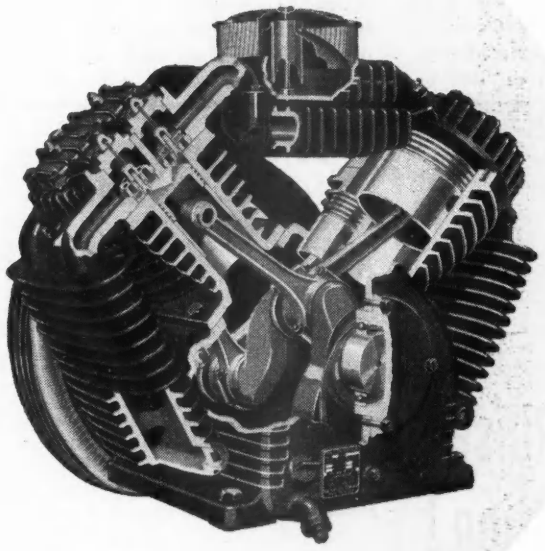
C. Maximum Potential Vehicle Speed

The suggestions just outlined will also serve to solve for the maximum potential vehicle speed, which, of course, is independent of the axle ratio. This is accomplished by projecting the maximum delivered power onto the resistance power curve. Gear ratios can then be selected which will cause the engine speed of maximum delivered power to be reached at this road speed. In the example used for Chart 1. it might be desired to determine the maximum potential road speed for a similar operation in another location, perhaps at sea level, all other conditions remaining the same. Maximum net engine power at sea level is 112 and no altitude correction is required. This is reduced to 99.2 by deducting the chassis friction power of 12.8 hp. Point C is found on the resistance curve in Chart 1 to give maximum speed potential of 49 mph. The gear reduction necessary to realize it would be about 6.52.

END

(Please Resume your reading on P. 85)

"Brrr! I feel an awful draft! Must have forgotten to close my back flap!"

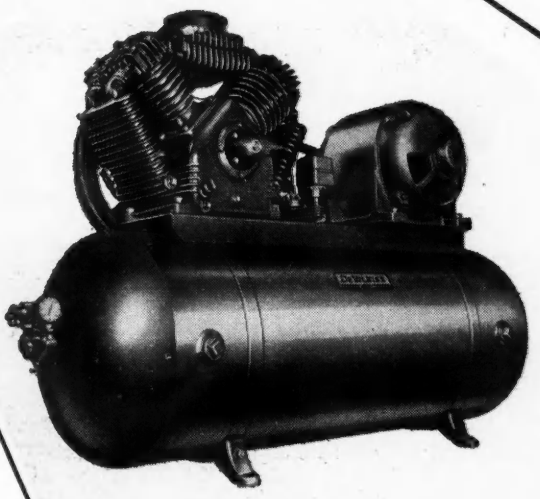


MORE FINS

. . . AND

17 other features

. . . give you more air for your money



● The new V-type DeVilbiss Air Compressor will cut your electricity bills without cutting your air supply. In DeVilbiss Compressors, the greater area of fins means extra cooling . . . a major factor in compressor efficiency—giving you more air for your money.

No other air compressor has all the 18 features found on DeVilbiss. These enable the DeVilbiss Air Compressor to operate efficiently at rated capacity for the intended service, without overheating, without excessive wear.

You'll reduce maintenance and repair bills, too. Some DeVilbiss compressors have been in service as long as 20 years, with owners reporting no expense except routine maintenance.

The DeVilbiss name on any product . . . compressors, oil-spray and car-washing guns, paint spray equipment . . . means that you're getting the maximum in quality and engineering.

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Canadian Plant: WINDSOR, ONTARIO

DE VILBISS

means **Quality** *in all four . .*

★ AIR COMPRESSORS
★ SERVICE STATION HOSE
★ HOSE CONNECTIONS
★ SERVICE EQUIPMENT

New Product Descriptions

Continued from Page 34

anyone and by use of additional examiners five persons may be examined simultaneously. It is used in driver training in order to discover any limitations. Porto-Clinic Instruments, Inc., N. Y. C.

P59. Hydraulic Pump

The "PumPac" electric hydraulic pump is mountable on all makes of trucks, tractors and other machinery. With a pressure range from 100 to 5000 psi, it is adaptable to changeover from any hand pump installation without changing the ram size or mounting. The unit is self-contained and includes electric water pump, reservoir, and control valve which when converted to a 6-volt battery, develops pressure to handle a snow plow with standard 1½ by 2 in. diameter cylinders. Installation reqires one wire to the battery and only one hose line from pump to ram. A load of 15,000 lb can be raised 8 in. in 15 sec with no appreciable battery drain. Jarp Corp., Wausau, Wis.

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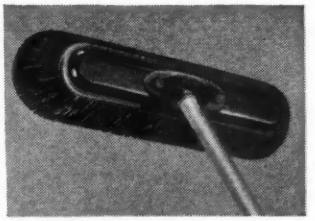
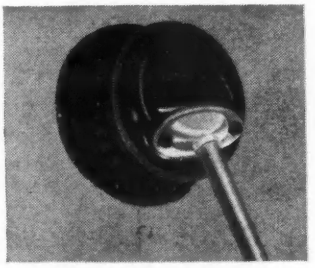
There's no tool that cuts washing costs like a Speed Wash fountain brush. Clean, fresh water is constantly fed to the surface. Tufts of Nylon and Horsehair protect the finish. Tufts are hand-stitched with rust-proof wire for long service. Block is covered with a sturdy steel back, yet brush weighs only 40 ounces for easy handling. Five foot handle is detachable. Brush head is economical to replace. Write for full details today.



Oblong Speed Wash for Heavy Duty Trucks, $11.75



Round Speed Wash for Light Trucks, $14.25

Milwaukee Dustless Brush Co.
530 N. 22nd St., Milwaukee 3, Wis.

Late Product Flashes

The new brake drum lathe cutter with a replaceable carbide cutting tip, announced by **Barrett Equipment Co.**, St. Louis, Mo.

A new series of angle-head wrenches designed for close-quarter work is available from **Snap-On-Tools Corp.**, Kenosha, Wis.

Longer life, less cylinder drag and greater resistance to scuffling are basic advantages of the new Chrome-Faced Steel-Vent oil control ring, announced by the **Hastings Mfg. Co.**, Hastings, Mich.

A fast-acting lubricant-base penetrating oil called 318 Pen-a-trate is available from **Ensign Prod. Co.**, Cleveland, O.

A new high tension ignition cable for suppression of radio frequency radiation caused by spark plugs introduced by the **Packard Electric Div.**, Warren, O.

A new type ripe plug with a vent incorporated in the body is available from the **U. S. Plug & Fitting Co.**, Cleveland, O.

The "Chief," a new, improved ½-in. to 2-in. portable pipe and bolt threader, offered by the **Quijada Tool Co.**, Los Angeles, **Calif.**

A redesigned line of replaceable-face hammers, introduced by **Greene, Tweed & Co.**, North Wales, Pa.

A recently developed abrasive impregnated rolled steel floor plate is available from **Alan Wood Steel Co.**, Conshohocken, Pa.

A new side-loading hydraulic truck and fork-lift handling 3,000 to 30,000 lb. loads in multitudinous ways is available from **Lull Mfg. Co.**, Minneapolis, Minn.

A new 6-in. saw adjustable for depth and bevel cutting is available from **Cummins Portable Tools**, Chicago, Ill.

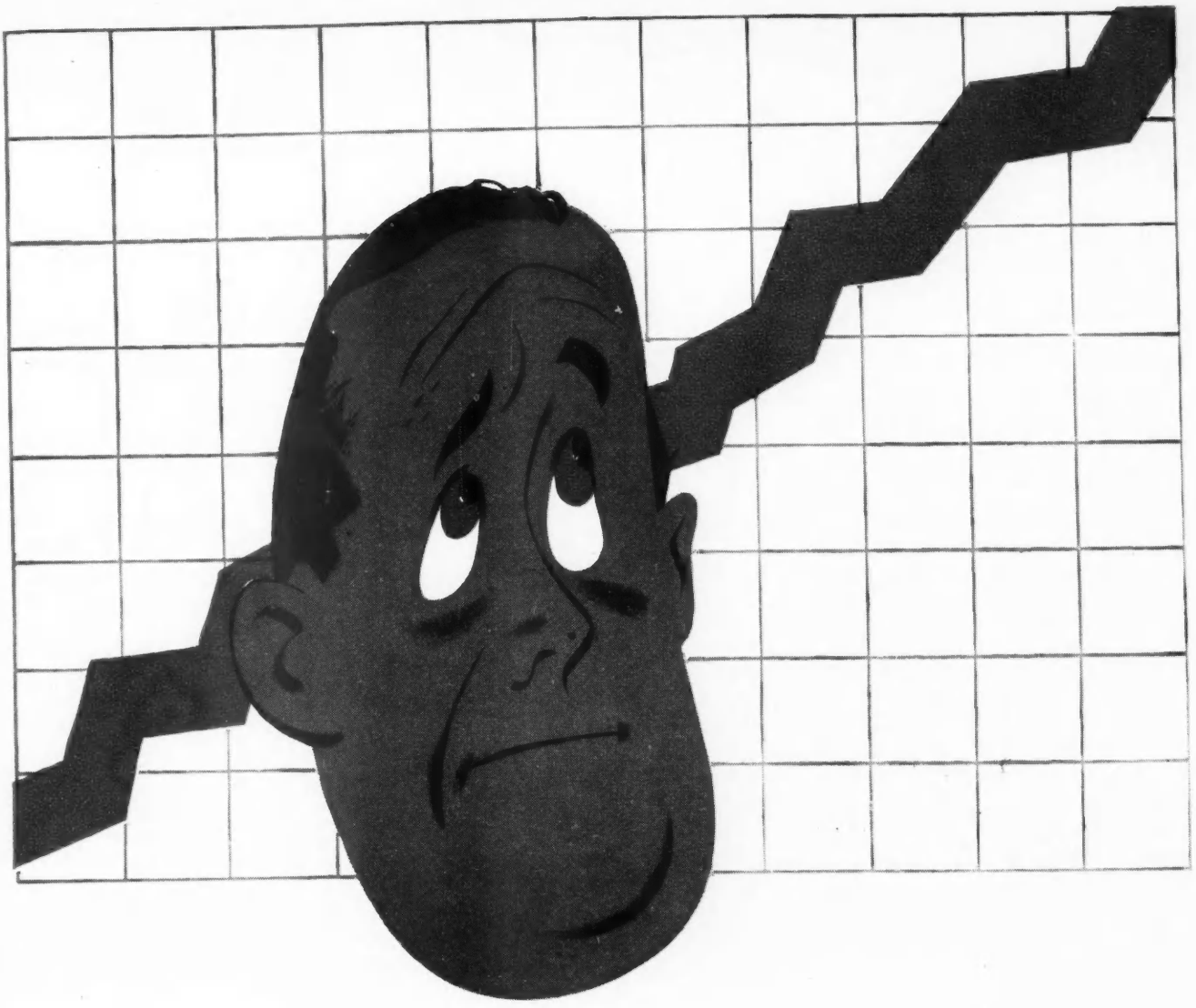
An improved water-tight dry chemical fire extinguisher is available from **Ansul Chemical Co.**, Marinette, Wis.

A time-saving universal steering wheel puller designed and made available by the **Owatonna Tool Co.**, Owatonna, Minn.

A new series of 3-wheeled Salsbury Scooters of 600 lb load capacity is offered by **Wayne Mfg. Co.**, Pomona, Calif.

A chain-breaking vise incorporating many exclusive features is announced by the **Morse Chain Co.**, Detroit, Mich.

(TURN TO PAGE 174, PLEASE)



Maintenance costs still up?

YOU can attribute nine out of ten engine breakdowns to excessive wear. Why not *prevent* that excessive wear with Quaker State HD Oil?

Quaker State HD Oil is specially refined for heavy duty use from 100% pure Pennsylvania grade crude oil—finest crude oil ever discovered anywhere in the world. Even when the going is toughest, Quaker State HD Oil keeps its body, lubricates thoroughly, protects fully, cushioning every friction surface. It helps prevent the formation of sludge, gum or varnish — actually, it *cleans* as it lubricates.

Switch over to Quaker State HD Oil *right now*—if you want to give your equipment the breaks instead of the breakdowns.

QUAKER STATE
HD OIL
AND SUPERFINE LUBRICANTS

Use Quaker State HD Oil for trucks, buses, taxis, tractors. Use Quaker State Motor Oil for passenger cars.

QUAKER STATE OIL REFINING CORPORATION, OIL CITY, PA.

New Products

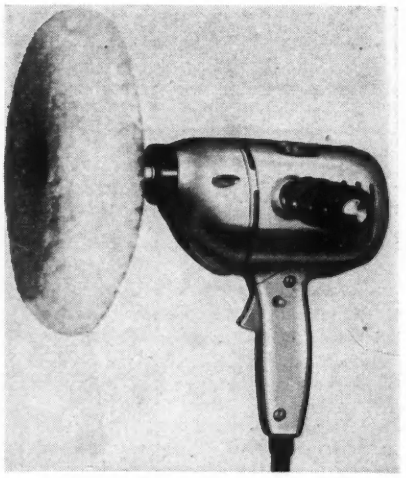
Continued from Page 172

P60. Aluminum Disc Wheel

Available in both the 7.50 x 20 and 7.50 x 22 sizes, this forged aluminum disc wheel can effect a reduction of 50 lb per wheel in the larger size. The one piece forged design rapidly dissipates heat generated at the rim area and helps to reduce tire wear. The manufacturing process assures that the wheels will run truer than other wheels of this type. It can be used in its natural finish and does not need a protective coating. Aluminum Co. of America, Pittsburgh, Pa.

P61. Polisher

A 7-in. polisher designed for use in small shops, is light, well balanced, rugged with a reversible auxiliary side handle for either right hand or left hand use. It is equipped with a spindle locking pin for speedy changing of bonnets and pads. The no-load speed is 2000 rpm which makes it adaptable



for use with the Vitrification Method of car polishing. Available for 115 or 220 volts, A.C. or D.C. operation. Van Dorn Electric Tool Co., Towson, Md.

P62. Paint-Striper

Models of this flow-controlled traffic line-marker are equipped with a sled-type paint spreader that will accommodate any striping or zone paint of standard manufacture. With the use of a special shoe, reflective paint such as Centerlite can be readily applied. With the use of interchangeable spreaders lines from two to eight in.

wide can be laid. Gravity fed, a distribution apron feeds to finger rollers. Offset in operation, the machine permits a clear view of the line without straddling. Available in nine and five gallon sizes. Universal and Marine Mfg. Corp., Yonkers, N. Y.

(TURN TO PAGE 176, PLEASE)

STRIPPING PAINT...

the Oakite way saves time... saves money!

Here are three easy Oakite ways to strip paint, lacquer, enamel. Use any one of them to remove as many as twenty coats at amazing speed. And do it safely, economically.

HOT FLOW-ON—With spray-rake, flood surfaces with hot solution of Oakite paint-stripping compound. Paint quickly loosens and flows off. Method recommended where stripping is performed on a large scale.

STEAM-GUN—Surface is wet-down with steam-mixed Oakite paint-stripping solution. Quickly, paint wilts, and is rinsed off. Oakite Gun, which blends stripper with steam, is designed to apply wet-steam rinsing.

COLD SPRAY—Oakite paint-stripping solution is applied under pressure through wide-angle nozzle. Intermittent water-rinses remove loosened paint. Method recommended where facilities are limited.

IF YOU WANT on-the-spot Oakite paint-stripping demonstration, merely call in your Oakite Technical Service Representative. Or write to Oakite Products, Inc., 52F Thames St., New York 6, N. Y. for booklet F 4401, Free.

FREE BOOKLET!

This 36-page Oakite Cleaning Guide tells how to improve *all* your cleaning. Write for FREE copy!

Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE

TRADE MARK REG. U. S. PAT. OFF.

SPECIALIZED INDUSTRIAL CLEANING

MATERIALS • METHODS • SERVICE

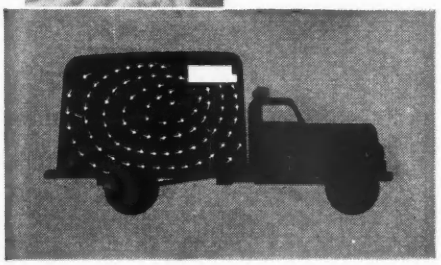
SAVE 25% OR MORE

ON DRY ICE
Truck Refrigeration Costs

WITH

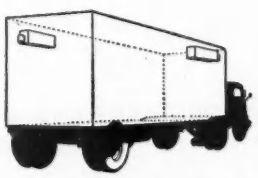
Foster-Built

DRY ICE TRUCK BUNKER



Tests on route trucks have shown that Foster-Built Dry-Ice Truck Bunkers maintain desired temperatures more than 18 hours with as many as 30 to 40 door openings.

Transport trucks with Foster-Built Dry-Ice Truck Bunkers have gone as long as 72 hours under moderate weather conditions without re-icing. Bunkers are available in 2-block and 4-block sizes.



Typical bunker installation in transport truck

DRY ICE SAVED MEANS DOLLARS TO YOU

The Foster-Built Bunker is the new low-cost way to efficient dry ice truck refrigeration. It assures *uniformity* of temperature and saves you 25% or more on your dry ice bill. Don't waste dry ice by throwing it on top of the load... save money... use Foster-Built Dry Ice Truck Bunkers.

LIGHT WEIGHT—BIGGER PAYLOADS

The 2-block Foster-Built Bunker weighs only 38 lbs. net. It is easy to install and requires no maintenance. Foster-Built Bunkers have proved efficiency in maintaining desired temperature both for frozen and non-frozen loads.

FOOLPROOF IN OPERATION

The Foster-Built Bunker is constructed so that the Dry Ice rests directly over a 2-inch bottom air duct. The Dry Ice chills the metal top plate of the air duct, and a low-amperage sirocco-type fan forces the air along the length of the chilled plate, effectively lowering the temperature of the air. The chilled air is then circulated throughout the truck.

IDEAL FOR ALL TRUCK OPERATORS

The Foster-Built Dry Ice Truck Bunker has proved to be an effective, low-cost means of refrigeration for both fleet and individual operators. Units are easily removed when refrigeration is not required and in fleet operation may be moved from truck to truck.

GET THE FACTS . . . MAIL THIS COUPON TODAY . . .
or for immediate action call MOnroe 6-6880, Chicago.

Foster-Built Bunkers, Inc. CCJ
757 W. Polk Street, Chicago 7, Illinois

Gentlemen: Please send me fully illustrated, free booklet giving complete information and "case histories" of Foster-Built Dry-Ice Truck Bunkers.

Name.....

Company.....

Address.....

City..... Zone..... State.....

New Products

Continued from Page 174

P63. Body Drill

With the characteristic die-cast aluminum body, the Body Builder's Special weighs only 4¼ pounds and measures only 8¾ inches overall length. Capacity is ¼-inch in metal, ½-inch in wood. No-load speed is 1300 RPM. The red knob handle rotates in a slot in the tool, and is quickly adjustable to the handiest, most comfortable position. The drill is equipped with Jacobs Model 7B geared chuck with ball thrust bearing mounted on the chuck spindle. Cummins Portable Tools, Chicago, Ill.

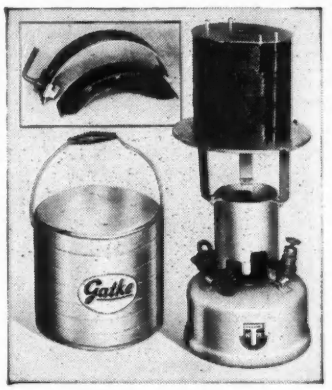
P64. Nozzle-Sponge Pad

A threaded bushing in the sponge rubber wash pad makes connection to the pistol grip-trigger valve water nozzle. Water flow from the nozzle penetrates evenly throughout the pad to provide a continuous rinsing, eliminating abrasive action and scratching of fine finishes. The sponge rubber wash pad is 5 x 3 3/16 x 1½ in.

An automatic shut-off valve at the nozzle has a lock-ring to hold the trigger valve open for continuous flow. The Tri-Con Nozzle has a reversible cap. The solid brass cap converges 37 separate streams of water into one solid hi-velocity jet and by reversing the cap a large or small spray is delivered for rinsing purposes. Molded Specialties, Inc., Cleveland, Ohio.

P65. Brake Relining

This unit includes a debonder, drill jig, and multiple coverage brake lining set. Eight bonded shoes can be placed in the debonder, the heat turned on and within six min the heat destroys



the bond and the liners pop off. The shoes can then be drilled with the drill jig and the lining rivetted. Drilling time for eight shoes is only ten min. Set No. BR850ID services 380 models. Gatke Corp., Chicago, Ill.

P66. Fast Charger

Designed for use by garages, service stations and fleet-owners, a new fast charger with high and low rate charge and fool-proof mechanical timer has automatic circuit-breaker protection requiring no fuses. A meter on the full-wave selenium charger indicates battery condition before and during charge. Richardson-Allen Corp., New York, N. Y.

P67. Adjustable Nut

The Educated Nut assures precision adjustment of front wheel bearings. It has 84 points of adjustment in its two parts. The cap slips over the nut and is lined up with the cotter pin holes after the nut section is adjusted in the usual manner. Bear Mfg. Co., Rock Island, Ill.

(TURN TO PAGE 178, PLEASE)

WILLIAMS
SUPERSOCKETS
WORLD'S MOST FLEXIBLE WRENCH SYSTEM The engineered flexibility of Williams "Supersockets" permits the combining of sockets, handles and accessories to create special wrenches for special jobs. Available in five different patterns, with drives ranging from 1/4" to 1" square, and with socket openings from 3/16" to 3-1/8". Write for Williams "Supersocket" Catalog A-50.
Set No. S-10 Complete in Metal Case, 36 Pieces
21 Sockets and 15 Attachments
WILLIAMS
• OUR DISTRIBUTOR IS YOUR LOCAL WAREHOUSE
J. H. WILLIAMS & CO., AUTOMOTIVE DIVISION, BUFFALO 7, N. Y.

A Type for Every Purpose

SIOUX "RESIN BOND" Abrasive Discs

INDUSTRIAL
HEAVY FIBRE

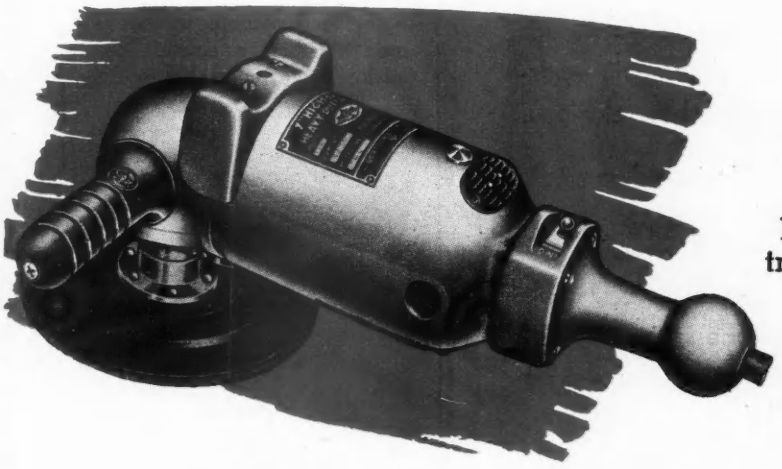
Industrial style abrasives suitable for heavy duty work, reducing welds, etc., and where heat generated is not a problem.

REGULAR
STANDARD FIBRE

Built on lighter fibre than industrial abrasives and are intended for body work where light gauge metal is used.

OPEN COAT
HEAVY FIBRE

For paint removal and cooler grinding on fenders, door panels, wood-working, etc. Non-Loading and Non-Clogging.



SIOUX HIGH SPEED SANDERS

Engineered and built for long trouble-free service. 3 Models: No. 1250—9" High Speed Heavy Duty; No. 1267—7" High Speed Heavy Duty and No. 1265—7" Special.

Sold only through Authorized SIOUX Distributors

STANDARD THE WORLD OVER

ALBERTSON & CO., INC. SIOUX CITY, IOWA, U. S. A.

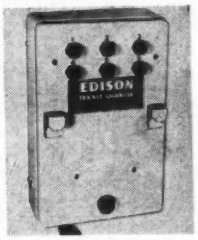
New Products

Continued from Page 176

P68. Pre-fab Body Deck

Pickup bodies can be converted in three hours to all-steel van type by a new "Economizer" series of pre-fabricated decks shipped in sections. Built of welded and riveted steel, the decks convert open bodies to carryall or panel design. Rockford Automotive Industries, Inc., De Kalb, Ill.

P69. Trickle Charger



This new design features a double wound transformer and a high efficiency, oversize Selenium rectifier. It will keep from one to six batteries fully charged with an average charging rate of 1/10 amp. Indicator lights show batteries are receiving charge. uses 105-125, 50-50 cycle AC. Thomas A. Edison, Inc., West Orange, N. J.

HERE'S A WAY TO INCREASE THE "PAY"

. . . IN YOUR PAY-LOAD

Install a Cemco Hydraul-lift Tailgate—let the truck motor do the lifting or lowering between ground and truck bed. One man can operate it! Reduce your labor costs—personal injuries, claims, breakage. Improve labor relations.

Fits any truck—new or old. Can now be installed on semi-trailer bodies as well as standard trucks.

A CEMCO GATE HAS LESS WEIGHT!

Complete unit, including all mounting accessories, weighs only 733 pounds. Yet it lifts up to one ton! Less weight means more payload. Safe—dependable!

Write for the name of dealer nearest you

CEMCO INDUSTRIES, INC.,
GALION, OHIO

P70. Test Stand

With a constant-speed motor drive this unit will test belt-driven 6-volt generators at rated outputs up to 50 amperes and 12-volt generators to 25 amperes. Regulator testing procedure has been simplified by a single pair of color-coded test leads. Selector switches provide for any desired series of tests.

A feature of its belt drive is that it duplicates generator operation in the vehicle. Drive is quiet for detecting faulty bearings, squeaking brushes. It also avoids dangerous operation from misaligned couplings turning at high speed.

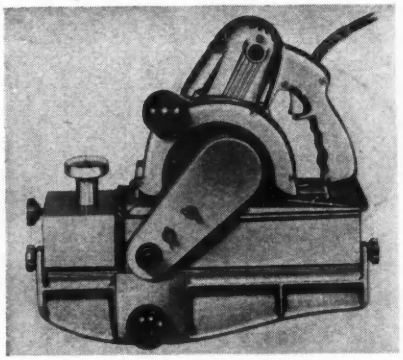
Made of reinforced welded sheet metal with baked-enamel finish, the King GT-15 unit is 16½ in. high, 19 in. wide, 26 in. deep. Electric Heat Control Co., Cleveland, Ohio.

P71. Paint Remover

The Helperize process, consists of a special chemical preparation which is either sprayed or brushed on and left for several hours, after which the car is washed down with water, flowing off both the remover and all paint right down to the bare metal. Scraping, sanding or grinding is not required. The chemical agent is not harmful to chrome or rubber and no residual deposits are left on the metal surface. A special re-usable putty is used to seal openings around windows. Helper Paint Removing Service, Inc., Cleveland, Ohio.

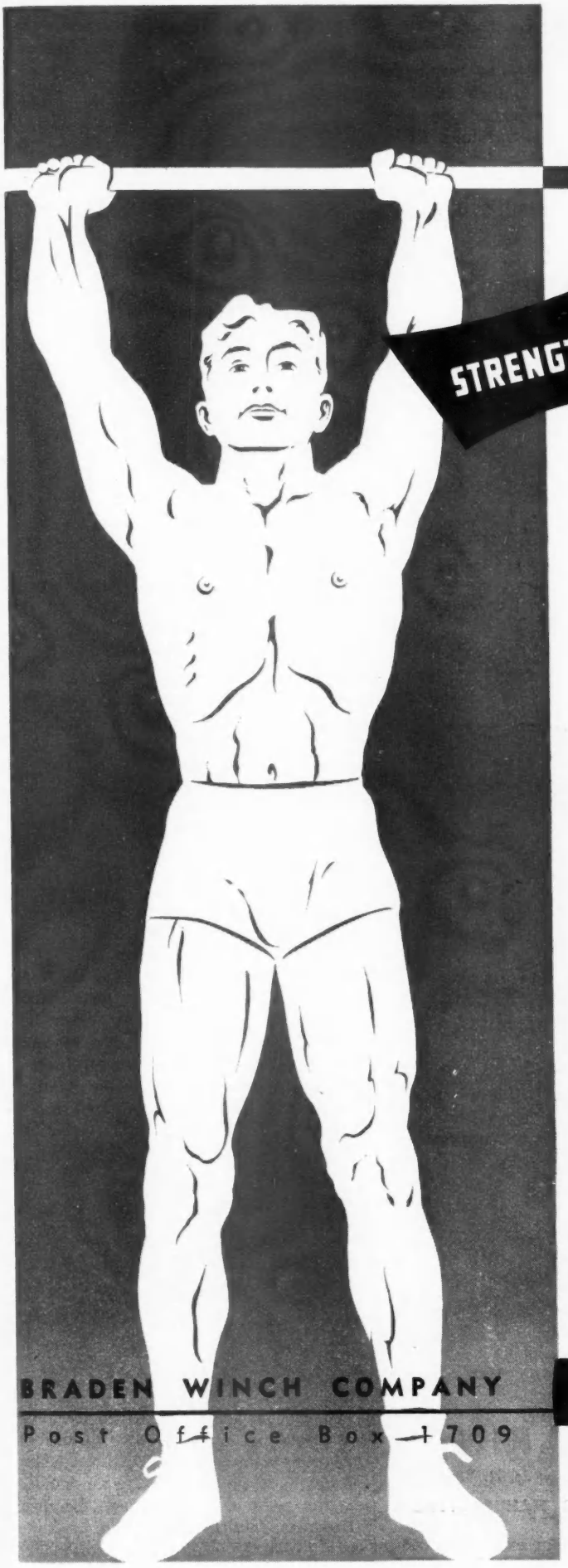
P72. Planer Saw

A 4-in. planer that is quickly convertible into a 6-in. portable saw does a fast job of surface planing, door planing or bevel planing, with or across the grain, leaving a smooth chatter-free finish. Three removable cutting knives



are easy to sharpen and easily replaced. Bevel attachment has a safety guard which protects the operator from the cutter head. The unit weighs 20 lb. Cummins Portable Tools, Chicago, Ill.

(TURN TO PAGE 180, PLEASE)

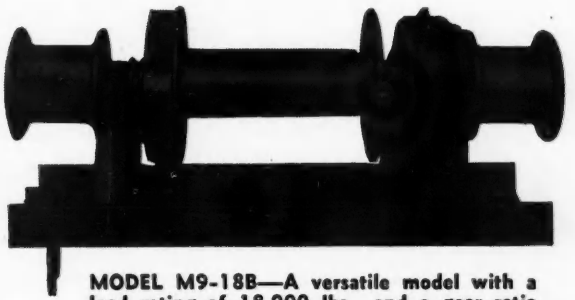


STRENGTH WITHOUT *Excessive* WEIGHT

The weight of a metal doesn't always determine its strength. Excess metal on a piece of equipment may add to the appearance, but it may not improve performance. In fact, excess weight increases initial cost and decreases pay load.

BRADEN Engineers constantly strive for metal designs that are light in weight, but have the necessary strength for top performance. That's why you'll never find excess weight in a BRADEN Winch. Compare the weight of any BRADEN Winch with that of any other winch of comparable rated capacity.

BUY BRADEN — They Are Safer



MODEL M9-18B—A versatile model with a load rating of 18,000 lbs., and a gear ratio of 44 to 1. Equipped with the New OIL-COOLED, FULLY ADJUSTABLE, AUTOMATIC SAFETY BRAKE.

BRADEN WINCH COMPANY
Post Office Box 1709

BRADEN Winches

TULSA 1, Oklahoma

New Products

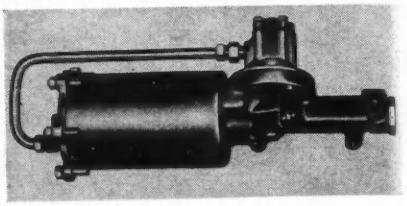
Continued from Page 178

P73. Brake Fluid Dispenser

To operate this Whiz Auto-Flow dispenser, a metal siphon tube attached to a threaded cap is inserted into the opening of any standard size gallon can and screwed tight. Attached to the screw cap is a small rubber bulb which is then squeezed several times to build up air pressure in the can. The air pressure causes brake fluid to flow through an eight-foot long rubber hose with which it is easy to reach the master cylinder. A shut-off clamp on the end of the hose can be flipped on or off to control the flow of fluid. R. M. Hollingshead Corp., Camden, N. J.

P74. Air-Hydraulic Brake

The Air Hy-Power combines three air and hydraulic brake units into a single device. This unit can be located at any available place on the chassis without dismounting or moving the master cylinder. It eliminates the air brake foot or treadle valve and bracket, connecting linkage and installation



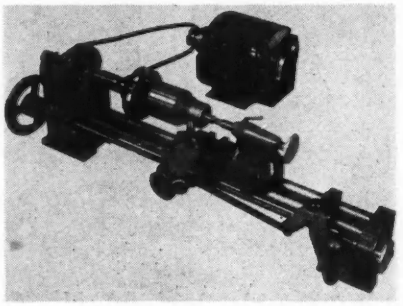
cost. Merely interpose the unit between the master cylinder and the wheel cylinders and reconnect to hydraulic lines. Mud, water, dust or dirt cannot enter to corrode, rust or unseat internal valves. Midland Steel Products, Detroit, Mich.

P75. Bus Heater

Custom-styled under-seat bus heaters are available in two models depending upon heat output of 25,000 and 35,000 btu per hr. Eight-in. diameter fans deliver 320 cfm, in both sizes. Brass tanks, headers, tubes, copper fins, are all common for both sizes. The smaller model has 8¾ x 8¾ x 2⅞ in. heating surface with overall dimensions of 11½ x 11½ x 9 in. The larger model has a heating surface of 13½ x 8¾ x 3¾ in. and overall dimensions of 16½ x 11½ x 9 in. Truck and Coach Heater Sales, Detroit, Mich.

P76. Armature Lathe

This armature lathe can recondition and undercut commutators up to 3½ in. diameter and 3 in. long. It also can be adapted for use as a standard engine lathe for cutting small tool steel. A jackshaft which reduces the speed of the lathe to tool steel requirements is the only extra accessory necessary. The lathe differs from other lathes in that it has a standard feed screw



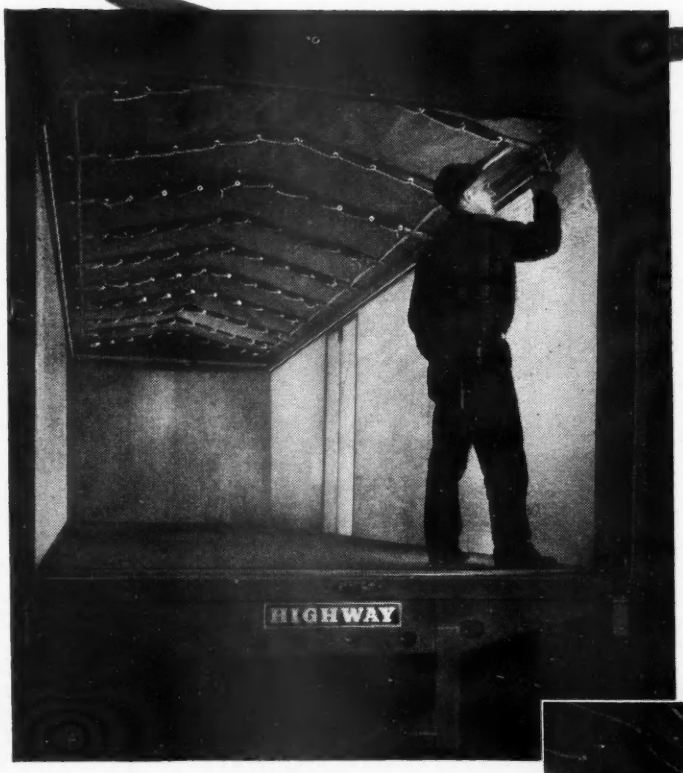
and tool bit compound. When used for undercutting, the tool bit is turned 90 degrees to the left and fed through the commutator groove by using the handle at the right of the machine. Lempco Products, Inc., Bedford, Ohio.

(TURN TO PAGE 182, PLEASE)

Highway Trailer Adopts

Pittsburgh SPEED-RACK

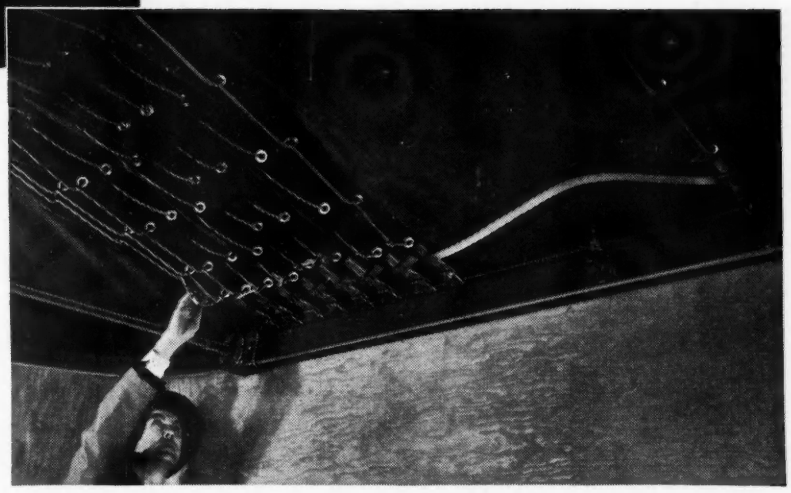
as original equipment because of . . .



1. **Savings in tarpaulin and bows**
2. **Savings in loading and unloading costs**
3. **Greater Safety**

Now Pittsburgh Speedrack is standard equipment on Highway Trailer Company open top trailers because of the time, money and labor saving advantages it provides. Also, Pittsburgh Speedrack saves time at the loading dock—reduces damage claims—provides greater safety for the operator. Highway finds that customer relations are at a new high with this quick, efficient method of covering and uncovering cargos. The Highway Trailer Company also is equipped to install Speedrack on any open top trailers.

Note how easily the tarp can be rolled or unrolled over the trailer by means of the hand crank. Bows and tarp stay intact when Speedrack is opened for loading.



Here a Highway Trailer Company inspector checks the snug fit of the bows and tarpaulin when the Speedrack is unrolled for loading. Chain drive is protected by steel plating against damaging blows.

For further information see your local truck or trailer dealer.

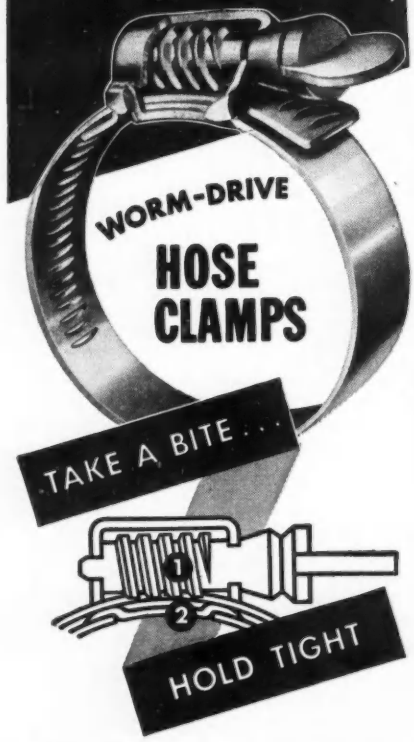
Pittsburgh SPEED-RACK

Pittsburgh Steel Products Company

A Subsidiary of Pittsburgh Steel Company

Grant Building · Pittsburgh 30, Pa.

"Aero-Seal"



❶ At least 3 hardened steel threads always engaged in worm drive action in slotted band.

Clamp unscrews easily but will never work loose.

❷ Worm threads cannot touch or damage hose—curved saddle assures uniform sealing pressure around complete circumference.

- Long Life—use again and again
- Integral construction — no parts to lose
- Corrosion resistant—cadmium plated or stainless steel
- Two types—screwdriver slot or thumb grip

WRITE TODAY for FREE SAMPLE

ANOTHER BREEZE MARK PRODUCT

"Aero-Seal"®
HOSE CLAMPS

BREEZE CORPORATIONS, INC.
45 South Sixth Street, Newark, N. J.

New Products

Continued from Page 180

P77. Fire Extinguisher

This portable 6-lb carbon dioxide extinguisher is compact, lightweight unit featuring thumb-trigger release and self-aimed nozzle and requires only one hand to operate. It is approved by the Underwriters' Laboratories and in official tests extinguished a 16 sq-ft gasoline fire in 7½ sec. Randolph Laboratories, Chicago, Ill.

Late Product Flashes

A front-loading aluminum frame to carry advertising messages on the sides of delivery trucks has been developed by **Arlington Aluminum Co.**, Detroit, Mich., for **Louis Edwin Ryan Advertising Agency**, Washington, D. C.

A new tool steel, specifically designed for hot work, has been developed by the **Allegheny Ludlum Steel Corp.**, Pittsburgh, Pa.

Low cost metal tags which facilitate permanent identification or coding of subassemblies, fabricated products, wiring or overhauled units are available from **Metal Marker Mfg. Co.**, Cleveland, O.

An improved type of carburetor and parts cleaner has been announced by the **E. F. Drew & Co., Inc.**, N.Y.C.

A new heavy-duty brake block for trucks, trailers and busses, guaranteed to eliminate brake fade under all conditions is announced by **World Bestos**, New Castle, Ind.

Using new forms and making use of duplicator to make copies of addresses on gummed labels, is now being promoted by **Ditto, Inc.**, Chicago, Ill.

Uni-Bar Fastype, a bar casting for multigraph use, cuts production time and costs and virtually converts machine into a printing press is offered by **UNI-BAR Fastype Co.**, Philadelphia, Pa.

A new horn named the Koo-Koo Horn which produces the call of the popular cuckoo is now being marketed by the **Do-Ray Lamp Co.**, Chicago, Ill.

END

(Please resume your reading on P. 39)

Budd Wheel
distributors can provide the same kind of service described in this advertisement

AKRON—Motor Rim Manufacturers Co.
ALBANY—Wheels, Incorporated
ALBUQUERQUE—Wheels & Brakes, Inc.
ATLANTA—Harris Automotive Service, Inc.
BALTIMORE—R. W. Norris & Sons, Inc.
BIRMINGHAM—Cruse-Crawford Wheel & Rim Co.
BOSTON—New England Wheel & Rim Co.
BUFFALO—Frey, the Wheelman, Inc.
CHARLOTTE—Carolina Rim & Wheel Co.
CHICAGO—Stone Wheel, Inc.
CINCINNATI—Rim & Wheel Service, Inc.
CLEVELAND—Motor Rim Manufacturers Co.
COLUMBUS—Hayes Wheel & Spring Service
DALLAS—Southwest Wheel, Inc.
DAVENPORT—Stone Wheel, Inc.
DAYTON—Rim & Wheel Service, Inc.
DENVER—Quinn & McGill Motor Supply Co.
DES MOINES—Des Moines Wheel & Rim Co.
DETROIT—H. & H. Wheel Service, Inc.
FARGO—Wheel Service Company
FT. WAYNE—Wheel & Rim Sales Co.
GRAND RAPIDS—Rim & Wheel Service Co.
HARRISBURG—Standard Wheel & Rim Co.
HARTFORD—Connecticut Wheel & Rim Co.
HOUSTON—Southwest Wheel, Inc.
INDIANAPOLIS—Indiana Wheel & Rim Co.
JACKSONVILLE—Southeast Wheel & Rim Co.
KANSAS CITY—Borbein, Young & Co.
KNOXVILLE—Harris Automotive Service, Inc.
LOS ANGELES—Wheel Industries, Inc.
LOUISVILLE—Auto Wheel & Rim Service
MEMPHIS—Beller Wheel, Brake & Supply Co.
MILWAUKEE—Stone Manufacturing Co.
MINNEAPOLIS—Wheel Service Co.
MOLINE—Mutual Wheel Co.
NASHVILLE—Beller Wheel, Brake & Supply Co.
NEWARK—Automotive Safety Inc.
NEW HAVEN—Connecticut Wheel & Rim Co.
NEW ORLEANS—Southern Wheel & Rim Co.
NEW YORK—Wheels, Incorporated
OKLAHOMA CITY—Southwest Wheel, Inc.
OMAHA—Morgan Wheel & Equipment Co., Inc.
PEORIA—Peoria Wheel & Rim Co.
PHILADELPHIA—Thomas Wheel & Rim Company
PITTSBURGH—Wheel & Rim Sales Co.
PORTLAND—Six Robblees, Inc.
PROVIDENCE—New England Wheel & Rim Company
RALEIGH—Carolina Wheel & Rim Co.
RICHMOND—Dixie Wheel Co.
ROCHESTER—Frey, the Wheelman, Inc.
SALT LAKE CITY—Henderson Rim & Wheel Service
SAN ANTONIO—Southwest Wheel, Inc.
SAN FRANCISCO—Wheel Industries, Inc.
SEATTLE—Six Robblees, Inc.
SOUTH BEND—Wire & Disc Wheel Sales & Service
SPOKANE—Bearing & Rim Supply Co.
SPRINGFIELD, ILL.—Illinois Wheel & Rim Co.
SPRINGFIELD, MO.—Borbein, Young & Co.
ST. LOUIS—Borbein, Young & Co.
SYRACUSE—Colbourn Wheel & Rim Service, Inc.
TACOMA—Six Robblees, Inc.
TOLEDO—Wheel & Rim Sales Co.
WICHITA—Borbein, Young & Co.

EXPORT
CLEVELAND—C. O. Brandes, Inc.

CANADA
CALGARY—Fisk Tire Service Ltd.
EDMONTON—Alberta Wheel Distributors, Ltd.
MONTREAL—General Auto Equipment Ltd.
TORONTO—Wheel & Rim Co. of Canada, Ltd.
VANCOUVER—Wheels & Equipment, Ltd.
WINNIPEG—Ft. Garry Tire Service Ltd.

heel changeovers pay off . . . on smaller trucks, too

...ading of Sir Robbins' Inc., Budd Wheel ...ers in Seattle, reports that his tire dealer, ...orld Auto Service, has changed over 19 ...ump trucks for the Washington Asphalt ...om 20 x 5.00 to 20 x 6.50 wheels. "This ...e rates, "was sold entirely on the merits ...lowing."

...d had been wearing out completely at ... miles. There hasn't been time enough to ...ce any tires since the changeover. They ...,000 miles now and treads are still in ...d shape. There have been no tire failures. ...ks fleet is operated in very rough service, ...angeover was made to cut down their high ...r mile on tires. In addition, this operator is ...

experiencing greater ease of handling, improved steering, less body sway, considerably better traction and reduced 'down' time."

Quite a result! And without even changing tire sizes! Don't think just because you are operating small or medium-sized equipment that changeovers have nothing to offer you. Ask a Budd distributor to inspect your fleet and advise you about it. Budd distributors are located in 57 principal U. S. cities, so there's one near you. The Budd Company, Detroit 14.

GENUINE Budd WHEEL

1948. *In June we ran this advertisement, telling of the change-over to Budd Wheels with wide-base rims of the fleet of the Washington Asphalt Company. They had been wearing tires to shreds in 11,000 miles, at a cost of $4.55 per thousand miles per tire.*

..42,000 Miles Later

1949. Here is the same truck illustrated in the advertisement above, 42,000 miles after the change-over, with treads about one-third worn.

So far, tire costs per thousand miles for the fleet, including the wheel cost, are as follows: Front tires, $2.10; rear tires, $2.06. That means they have already saved $624.96 *per truck*. And there's even more to come, for, considering the wear remaining, an eventual reduction to $1.00 per thousand miles per tire is anticipated.

This type of savings is 100% clear profit that goes into the truck owner's pocket. Find out if the Budd Wheel distributor near you can help you put some of those profits in your own pocket. Have him check your equipment for the correct combination of tires and rims. Doesn't cost anything to ask. The Budd Company, Detroit 14.

Look for this label (in blue, red and gold) on the rim of every genuine Budd Wheel

GENUINE Budd WHEEL

Washington Runaround

Continued from Page 48

Favors Broader Unification

Declaring that "it is essential that the various promotional and regulatory activities of the government fit together into a unified transportation program," President Truman in his annual Budget Message went one step further than Commerce Secretary Sawyer, who has recommended that only the government's promotional activities be unified, (CCJ, Jan., Page 71). Mr. Truman declared that while, "the long term interests of the general taxpayer, as well as the user of transportation, will best be served by the development of a balanced transportation system, substantially independent of government support," the government must unify its efforts in the transportation field.

Truck and Bus Sales Drop

The current year will be a good one for the automotive industry, according to a Dept. of Commerce analysis, but passenger cars are expected to account for a larger proportion of total output in 1950 than last year.

A decline in production during the last half of the year is forecast. Pointing out that total factory sales of 6.2 million units last year was an all-time record, the study said that it is unlikely that "1949 production will be equaled in the next few years."

Little Hope for Wickersham

While Federal license plates for interstate trucks would be welcomed by the industry, this perennial idea, advanced this year by Rep. Wickersham, D., Okla. has little chance of getting through Congress. With ever-growing resentment over Federal interference in fields which the States regard as their private provinces, Congress is not likely to move further in this direction during an election year.

Mr. Wickersham's proposal would call for the issuance of Federal license plates to replace the present assortment of State tags. Fees would be collected by the Federal government and apportioned among the States on the basis of mileage traveled in each, but even with this provision the outlook for passage of any such legislation is not very bright.

"Insured" Advertisers Warned

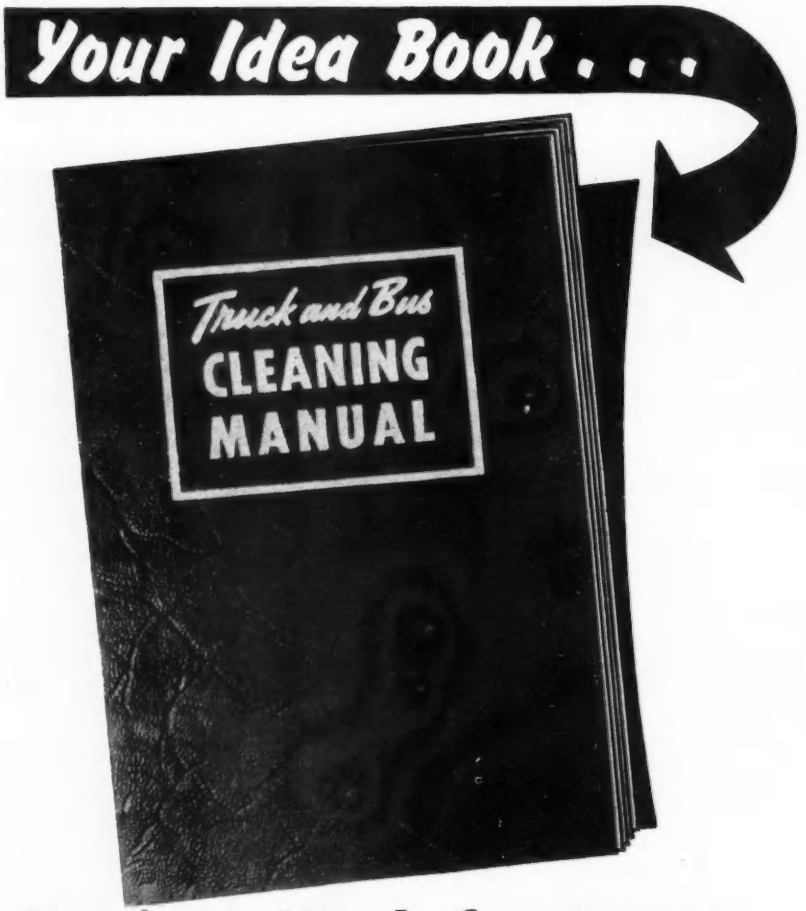
The ICC has notified all common carriers of household goods to cease advertising claims of full insurance or bonding coverage, unless information filed with the Commission indicates that the existence of insurance "covering all shipments to their full value without limitation and insuring against every peril to which any shipment may be exposed." This rule has been effective since 1947, but it has come to the attention of the ICC that many carriers are advertising claims such as the following: All loads insured, fully insured, cargo insurance on all loads, complete insurance coverage, etc., when such coverage is not actually provided.

Washington Miscellany

Recent loans made by the Reconstruction Finance Corp. include one of $1,000,000 to the Federal Motor Truck Co., designed to cover certain tooling expenses. . . . Carried over from the last session and still pending before Congress is a measure amending the Federal Motor Vehicle Theft Act to include truck-trailers. Introduced by Rep. Priest, D., Tenn., the bill aroused no opposition, but neither has it aroused any great enthusiasm. Therefore, its chances of passage are about 50-50; largely because of the time factor involved in a Congress which has a lot of campaigning to do before November, and members want to get home early. . . . Octane numbers of regular- and premium-price gasolines were one to two points higher last summer than during the two previous summers, according to the semi-annual survey of the Bureau of Mines. The average octane rating at regular gasoline tested last summer was 81.9, compared with 80.1 in 1948, and 80.2 in 1947. The average for premium gasolines was 88.0 last summer, compared with 86.1 and 85.9 in the two previous summers.

END

(Please resume your reading on P. 54)



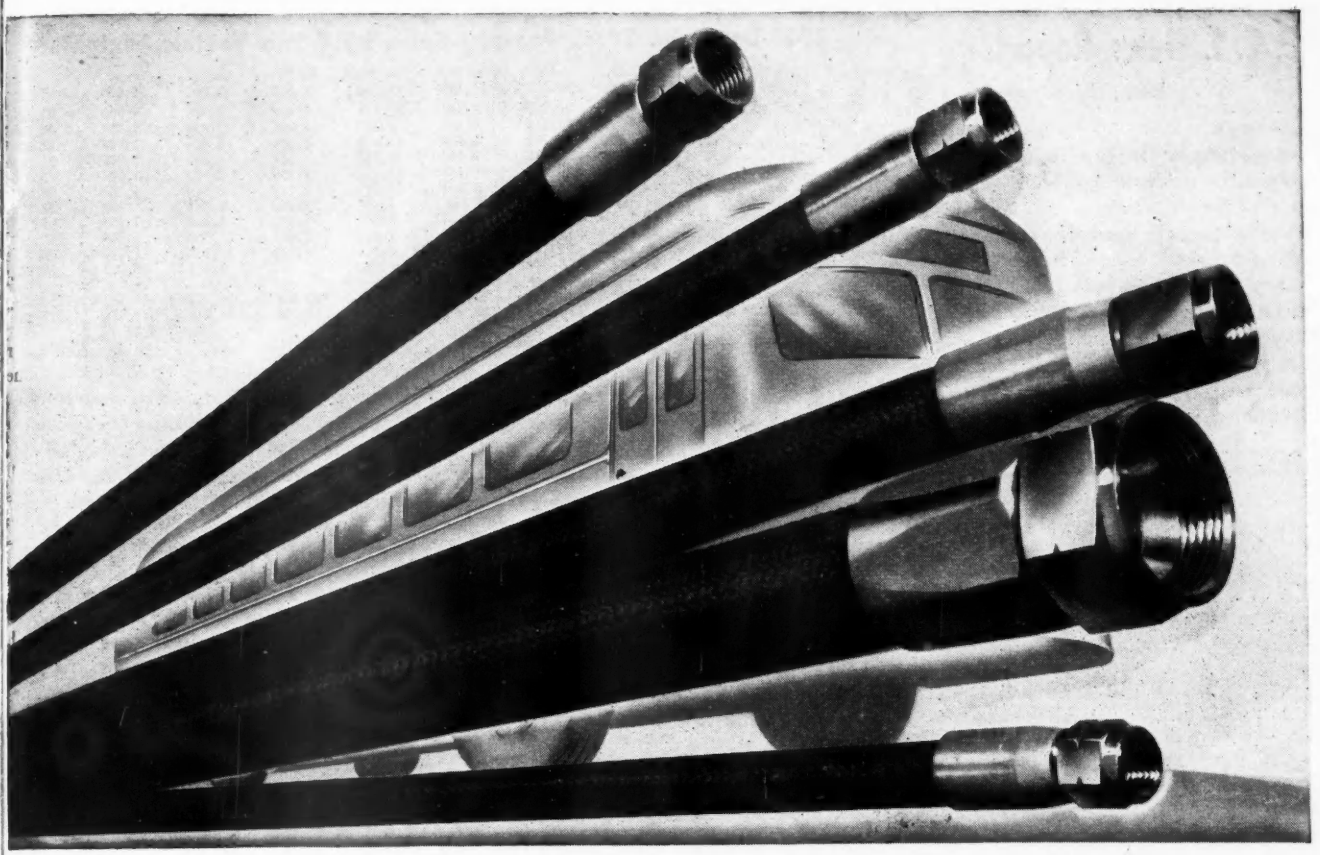
Put it to Work for Better, Faster, Lower Cost Cleaning

USE this 64-page text-book to discover ways and means of cleaning faster and better—with less elbow grease—on every cleaning job in your shop.

Write for YOUR copy!

MAGNUS CHEMICAL CO. • 38 South Ave., Garwood, N. J.
In Canada — Magnus Chemicals, Ltd., 4040 Rue Masson, Montreal 36, Que. Service representatives in principal cities.

Magnus
CLEANERS • EQUIPMENT • METHODS



AEROQUIP FLEXIBLE HOSE LINES ARE PART OF HEAVY MOBILE TRAVEL EQUIPMENT

19476

These high quality flexible lines reduce maintenance costs, eliminate leakage, and reduce overhaul time. They withstand heat, cold and vibration and eliminate the installation costs of forming and fitting rigid piping. Fittings are detachable and re-usable.

AEROQUIP CORPORATION

JACKSON, MICHIGAN

SALES OFFICES AND WAREHOUSES: 1053 NO. HOLLYWOOD WAY, BURBANK, CALIF. — 1215 SO. EAST GRAND AVE., PORTLAND 14, ORE. — 2912 N. E. 28TH ST., FORT WORTH 11, TEXAS — 72-74 STAFFORD STREET, TORONTO, CANADA

SALES OFFICES: 303 WAREHAM BLDG., HAGERSTOWN, MD. — 1419 2ND AVE., SO., MINNEAPOLIS 4, MINN.

AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U. S. A. AND ABROAD

C. C. J. News Reports

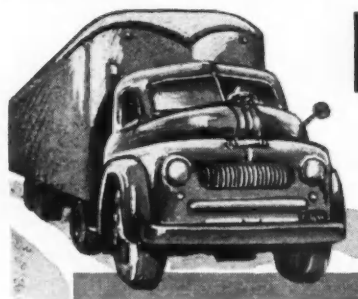
Continued from Page 39

A permanent Service Sales School for automotive products has been established at the Bendix Products division, Bendix Aviation Corp. at South Bend. The course of instruction covers Bendix Vacuum Power products including the Hydrovac vacuum power brake unit, Stromberg automotive carburetors and Bendix brakes. The educational plan has now been broadened to carry technical training to the distributor and associate distributor's service men in the field. Two separate traveling schools, of ten units each, the Vacuum Power Field School and Stromberg Automotive Carburetor School are now operating in the United States and Canada under the direction of the Bendix district managers.

1949 Domestic Truck Factory Sales by Gross Vehicle Weights*

	5000 lb. and less	5001-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-26,000	Over 26,000	Total
January	31,918	25,897	8,171	17,451	4,047	2,708	1,290	91,282
February	32,799	25,543	8,155	16,057	2,855	1,839	1,292	88,540
March	39,769	28,082	8,790	17,838	2,364	1,654	1,428	99,925
April	40,568	25,068	7,440	13,909	1,926	1,590	1,307	91,808
May	33,805	19,931	4,779	12,159	2,294	1,327	1,223	75,518
June	43,655	23,572	5,242	12,031	2,110	1,417	1,147	89,174
July	41,166	24,358	6,000	9,857	1,729	1,411	906	85,427
August	47,312	23,101	5,924	8,874	1,941	1,654	1,183	89,989
September	46,349	19,073	4,801	7,403	2,074	1,523	1,264	82,487
October	43,845	17,484	3,820	6,784	2,115	1,423	1,333	76,594
November	37,842	13,364	3,371	6,033	2,232	1,641	1,607	66,090
Eleven Months, 1949	438,828	245,253	66,493	128,396	25,687	18,187	13,980	936,824
Eleven Months, 1948	392,483	220,295	140,270	200,634	58,708	41,553	17,979	1,071,922

* Data from Automobile Manufacturers Association.



NIEHOFF
Quality Ignition
PARTS

Make a World of Difference!

- In Starting
- In Idling
- In Acceleration
- In Gas and Oil Mileage

For over a quarter of a century Niehoff Approved Quality Products have been the choice of Automotive service men who know their motors.

A national network of Niehoff Jobbers makes these parts readily available to you. Ask Your Jobber TODAY and see the difference.

C. E. NIEHOFF & CO.
4933 Lawrence Avenue, Chicago 30, Illinois
Branches: BOSTON 34, Mass., 254 Brighton Ave.; LOS ANGELES 15, Calif., 1330 W. Olympic Blvd.; NEW YORK 19, N. Y., 250 W. 54th St.

The Best in Ignition

D. J. Rohrer Dies

David J. Rohrer, vice president of the Four Wheel Drive Auto Co. and a director of the company since its organization in 1910, died suddenly on Jan. 9, at the age of 76.

H. A. Kern Reappointed

Hal A. Kern has been reappointed as chairman of the Labor Committee of the Truck Owners Association of California and California's representative on the Industrial Relations Committee of the ATA.

Safety Awards

Three national awards, first place in the National Tank Truck Safety contest, first place in the Tank Truck Trailmobile trophy contest and merit award in the ATA Safety contest, were presented to Dan S. Dugan. Ninety-five drivers also of the Dan Dugan Oil Transport Co., Sioux Falls, S. D., received individual awards from the National Safety Council and the ATA.

Labor-Management Meeting

Mr. Henry English, president of ATA, will be guest speaker at a joint meeting of the Western Highway Institute and Western Conference of Teamsters. This labor-management conference is to be held in Salt Lake City on March 17-18.

Rubber Suit

Charging that it has been denied its constitutional rights, the U. S. Rubber Co. has filed suit against the Federal Trade Commission in an effort to halt the Commission from proceeding with a proposed regulation which would limit discount rates on automotive tires and tubes, to one carload lots.

Exemptions Granted

The ICC has extended to Dec. 31, 1950, the exemptions which waive compliance with certain requirements for cargo tank specifications, vehicle brakes, labels, etc., for private motor carriers transporting inflammable liquids.

(TURN TO PAGE 188, PLEASE)

...to help assure "on time" schedules

equip every vehicle in your fleet with a Hein-Werner Hydraulic Jack!

Every vehicle in your fleet should be equipped with a rugged, easy-operating hydraulic jack of ample capacity to quickly handle emergency road repair. Jacks that won't work are a liability. Weed out your worn out jacks and replace them with Hein-Werner Hydraulic Jacks . . . the jacks that are factory tested at 1½ times rated capacity to assure dependability and safety. H-W Hydraulic Jacks are your greatest jack value for economy and service. Order through your Hein-Werner distributor today!

Made in models of 1½, 3, 5, 8, 12, 20, 30, 50 and 100 tons capacity, Bumper-Lifts, Swift-Lift, Sleeve Pullers and a complete line of Double-Acting Push or Pull Hydraulic Utility Units for body, fender and frame repairing.

HEIN-WERNER

HEIN-WERNER CORPORATION • WAUKESHA • WISCONSIN

C. C. J. News Reports

Continued from Page 186

New Ford Industrial Line

The new industrial engine power unit line which went into production in January, includes two six-cylinder models, two V-8 models and one four-cylinder model. Piston displacement is 337, 239, 254, 226, and 120 cu-in. respectively.

The units are offered complete with radiator, instrument panel, skid-type mountings and S.A.E. or Ford type housings. They may be ordered with or without clutch, power take-off and three, four or five-speed transmissions.

Down Go Battery Prices

Price reductions ranging from seven to eight per cent on Prest-O-Lite and Auto-Lite batteries for passenger cars, trucks, buses and tractors became effective on January 10. The price level now is almost 25% below the 1948 levels.

M. L. Orner Honored

Vice president of A. E. Friedgen, Inc., of New York City, Martin L. Orner, was awarded the Professional Engineer's Certificate by the University of the State of New York for his 30 years of engineering work.

Industrial Notes

The **United States Rubber Co.** has purchased the chemicals division of the **Glen L. Martin Co.** including the **Marvinol** plant and trade name.

Ross Roy, Inc., advertising agency in Detroit, has acquired interest in the **C. C. Fogarty Co.,** Chicago.

Minnesota Automotive, Inc., have moved their offices from Minneapolis to their factory in Mankato, Minn.

The **Holley Carburetor Co.,** Detroit, has been elected a member of the **Manufacturers Div. of the Automotive Electric Assn.**

A new branch building for the **Trailmobile Co.** is under construction in Detroit.

A new methanol production unit began operation at the Texas City, Texas, plant of the **Carbide and Carbon Chemical Div., Union Carbide and Carbon Corp.**

The **Mutual Life Insurance Co.** of New York purchased the Kansas City, Kansas plant of the **Fruehauf Trailer Co.**

The **J. A. Shomer Co.** has been appointed by the **Morse Chain Co., Division of Borg-Warner Corp.** as distributors in the Cleveland area.

Plans for three Thermofor catalytic cracking units to be constructed at refineries in Buffalo, N. Y., Beaumont, Texas, and Brooklyn, N. Y., were announced by the **Socony-Vacuum Oil Co., Inc.**

The **Alan Wood Steel Co.** formally opened its new $9,000,000 plant, the first hot rolled strip mill in its history, in Conshohocken, Pa.

A complete line of front and suspension parts for all popular cars and trucks is now being manufactured and marketed by **Chefford Master Mfg. Co., Inc.,** Fairfield, Ill.

To provide more direct service in the Southwest territory, the **American Brake Shoe Co.** has opened a new sales office in Houston, Texas.

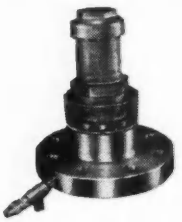
Brown Trailers, Inc., has opened a new $1,000,000 manufacturing plant in Toledo, Ohio.

Sun Electric Corp., Chicago, Ill., is building a nation-wide chain of 30 combination training and sales distribution centers spotted over the country by district. Mechanics are trained or retrained in the use of the Sun testing equipment.

(TURN TO PAGE 190, PLEASE)

SHELL USES S&J INTERNAL SAFETY VALVES

The SAFE handling and delivery of Liquefied Petroleum Gas poses problems even more complex than those presented in the handling of gasoline and less volatile products. Among the major petroleum marketers who employ the S. & J. Internal Hydraulic Valve System for maximum safety is the Shell Oil Company, always an exponent of going the last mile to make the production, refining and delivery of petroleum products safe for their own workers, for the public, and for their customers. In SAFETY—you can't afford anything short of the best.



Hydraulically operated safety valve installed inside tank shell normally held closed by spring pressure.

The S. & J. Hydraulic Operator which actuates the Hydraulic Safety Valves.

SHAND & JURS CO.
BERKELEY, CALIFORNIA

NEW YORK CHICAGO HOUSTON LOS ANGELES SEATTLE

SHAND & JURS

Unbeatable Combination

for fine parts and fast service

● When it comes to quality and service in parts and supplies, your NAPA Jobber has *the* unbeatable combination.

The NAPA lines he stocks are in many cases used as original equipment on your vehicles. In every case, these branded NAPA lines meet the highest, recognized quality standards for cars, trucks and buses of *all* makes.

And once your NAPA Jobber knows your vehicles and their requirements, he can give you unbeatable *service* on every unit in your fleet. Under his own roof, your NAPA Jobber stocks the parts to meet practically all of your normal requirements. Seldom-used parts, he can supply overnight or quicker by drawing on master stocks in the nearby NAPA Warehouse.

Count the advantages of doing business with the nation's largest independent parts organization, through your NAPA Jobber. Go over your parts picture with him in detail. Let him prove to you in person that . . .

Your NAPA Jobber is a Good Man to Know!

AS ADVERTISED IN THE SATURDAY EVENING POST

NATIONAL AUTOMOTIVE PARTS ASSOCIATION • DETROIT 1, MICHIGAN

N·A·P·A *is the largest Independent Parts Organization in the Industry!*

C. C. J. News Reports

Continued from Page 188

Seiberling Rubber Co. has announced price increases of tires and tubes of about 3½ per cent.

Brown Trailers, Inc., Spokane, Wash., and Toledo, Ohio, has recently appointed the Hawkeye Truck Equipment Co. as its independent distributor in Des Moines, Ia.

A new factory branch has been opened in Greensboro, North Carolina by **The Autocar Co.**

Standard Oil Company of California has launched a new series of Diesel and heavy duty gasoline engine lubricants.

The firm of Clawson & Bals, Inc., Chicago, a wholly owned subsidiary of Bohn Aluminum & Brass Corporation, will henceforth be known under the name of **Bohn Aluminum & Brass Corp., Service Division,** Holland, Mich.

Mid West Body & Mfg. Div., **Electrographic Corp.,** has entered into the van body field through acquisition of assets of Capitol Body Co.

Police Traffic School

The 1950 spring course in traffic police administration at the Traffic Institute Northwestern University will be attended by 35 police officers from the U. S., Canada, and Puerto Rico. The course in planning for police traffic supervision of highway use and users began on Feb. 1 and will continue through June 12. It will include more than 600 hrs of classroom study, work projects, demonstrations and a one-week field study trip.

3-M Expansion

Minnesota Mining & Mfg. Co., plans to construct a $3,000,000 office building next to its three-level administration building in St. Paul, Minn. This is in addition to the $2,000,000 manufacturing plant now under construction and scheduled for completion in fall.

Traffic Training

A three-day traffic engineering conference will be conducted on March 29, 30, and 31, 1950, for traffic engineers, municipal, and state highway engineers, police officers and others interested in safe, efficient traffic flow.

Traffic officers and all those responsible for traffic control and safety are also invited to attend the 10th Annual Traffic Officers Training School from May 15 to May 26, 1950.

Both sessions are to be held on the Penn State campus and further information can be obtained by writing the Course Coordinator of the Institute of Public Safety, State College, Pa.

Supervisor Training Opens

A forty-hour course for motor vehicle maintenance supervisors is scheduled for the Penn State campus, State College, Pa., March 6-10. The course will show how the maintenance program can be applied by the small owner-operator. It will also deal with how to plan the maintenance system for large and small fleets, how to select the right bus or truck for the job, and how to get efficient use from shop space, equipment, and personnel.

END

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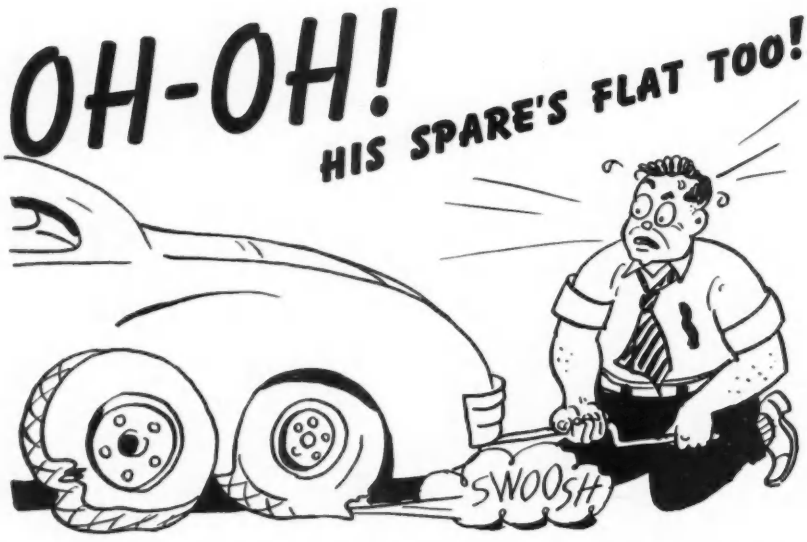
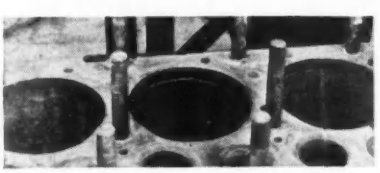
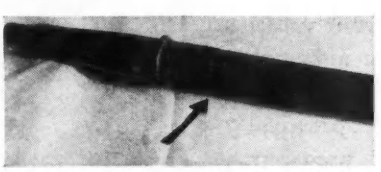


He's the Type Who Would Complete an Overhaul Job WITHOUT MAGNAFLUX* INSPECTION

FLAT SPARE!...It could happen to anyone...but *shouldn't* happen to YOU. Failure of a crankshaft or other vital engine parts shouldn't happen on any job of yours either...maybe only a week after a complete overhaul...not when reliable, non-destructive inspection is so fast and easy with a Magnaflux unit in the shop. It is routine with leading aircraft overhaul stations and railroad shops and is becoming more so every day with bus and truck operators.



Magnaflux inspection shows up otherwise *invisible* cracks in engine cylinder head block. Undetected it could have resulted in engine failure a week after a costly overhaul.



Finely powdered magnetic particles blown over truck rear axle show up fatigue crack under Magnaflux inspection during overhaul. Without Magnaflux it could have meant hours "lost" from axle failure on the road.

FOR SAFETY... ECONOMY... RELIABLE SERVICE

Write today for complete information about how Magnaflux can save you money on overhaul jobs.

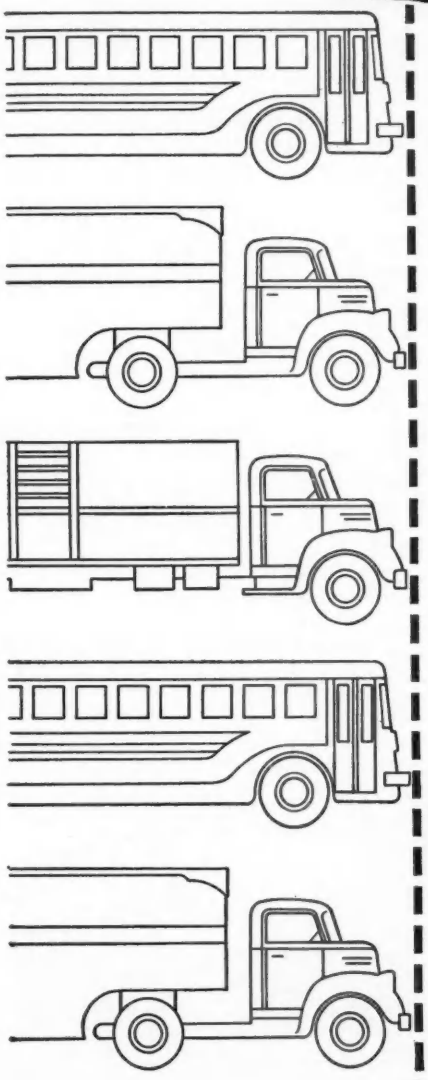
**Magnaflux — The Trade Mark of the Magnaflux Corporation applied to its equipment, materials and methods for magnetic particle inspection.*

MAGNAFLUX CORPORATION
5908 Northwest Highway, Chicago 31, Illinois
New York • Cleveland • Detroit • Dallas • Los Angeles
Export Distributor: Curtis Wright Corp. In Canada: Williams & Wilson, Ltd.

Pumping With Kenworth

Sales and service of this Kenworth pumping engine in Wash., Ore., Ida., Mont., and Alaska has been awarded to the Howard-Cooper Corp., by the Kenworth Motor Truck Corp. of Seattle, Wash.

STOP with TRU-STOP —the EMERGENCY BRAKE that prevents accidents

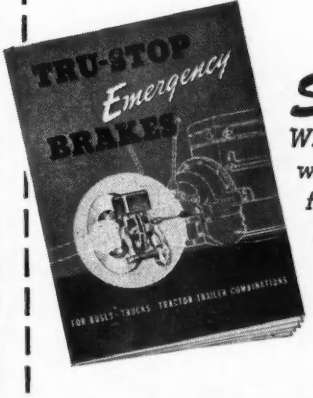


"Parking Brake Accidents" are not the only kind that can be prevented by TRU-STOP Emergency Brakes. Because TRU-STOPS are engineered to **decelerate** and **stop**—as well as **hold**—the loaded vehicle. Thus they can be depended upon to . . .

1. **Supplement** service brakes when there is need for a quick stop . . .

2. **Supplant** service brakes—allow the driver to continue safely in case of service brake failure. And, of course, to . . .

3. **Hold** the loaded vehicle on practically any up- or down-grade after it has come to a full stop.



***Send** for descriptive catalog **DH-33.** When you read it, you will realize why more and more safety-minded fleet operators are specifying TRU-STOP Emergency Brakes on new equipment. Write our Detroit office.*

ACCO

6-235 General Motors Bldg., Detroit 2 • 1119 Santa Fe Avenue, Los Angeles 21 • Bridgeport, Conn.

AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

TRU-STOP *Emergency* BRAKES

TRADE MARK

In Business for Your Safety

Truck-Trailer Meeting

Continued from Page 81

don't *do* something about it, we have no rigth to *gripe* about it." The implication being that the same motto would apply to affairs of every kind whether they be government, association, home, school, church, etc. There was special emphasis on the inherent right of every citizen to vote. But, of course, the special appeal was directed at the great need for firm and active support of all interested parties in meeting the problems and fighting the common battles of the motor carrier industry.

Trailer Interchange Discussed

AT A special round table discussion, Hoy Stevens, of American Trucking Assns. Inc, outlined the progress made to date by motor carriers in their effort to secure standardized trailer specifications, in so far as they affect inter-line interchange of trailers. It was hoped that detailed comments on the plan could be secured from the trailer manufacturers. However, except for some comments secured from the trailer builders in attendance, particularly with regard to maximum and minimum length of trailers in various categories, it was decided to refer further details to a technical committee. The session was none-the-less noteworthy since it marked the first step in a move for joint cooperation on this important project between the users and the builders.

Les Allman Named President

L. C. (LES) ALLMAN, vice president of Fruehauf Trailer Co., was named president of the association for a two-year period, succeeding Harrison Rogers who had been president for the past two years. Other newly-elected officers included: W. E. Grace, Hobbs Mfg. Co., Fort Worth, Texas, as eastern vice-president; P. M. Heinmiller, Utility Trailer Co., Los Angeles, Cal., as western vice-president; and C. A. Persinger, Wilson Trailer Co., Sioux City, Iowa, as treasurer. John B. Hulse of Washington is permanent secretary-manager.

Five Resolutions Passed

IN FIVE important resolutions, the association (1) condemned Federal deficit spending and urged economy in all departments, (2) urged the repeal of automotive excise taxes, (3) approved a policy statement of the directors calling for more nearly uniform size and weight standards, (4) agreed to close ranks with motor carriers in fighting anti-truck propaganda, and (5) condemned the attempt by the U. S. Dept of Justice to force dissolution of the Great Atlantic & Pacific Tea Co.

Among exhibitors at the convention were the Aluminum Co. of America, with displays of newly-developed aluminum wheels and aluminum and magnesium floors; the Reynolds Metals Co., showing its latest aluminum floors for both standard and reefer bodies; and the Gustin-Bacon Mfg. Co., with an intriguing display of its "Ultralite" insulation.

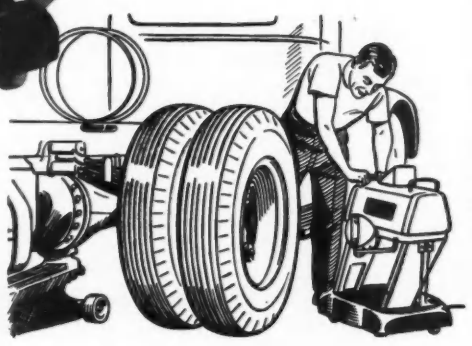
END

(Please resume your reading on P. 82)

NOW! BALANCE WHEELS Right on any truck or car!

New Stewart-Warner *Electronic* Unit Balances Wheels in True Running Position — Quickly, Easily, Accurately!

Another Product of STEWART WARNER



Now you can protect your vehicles with accurately balanced wheels this easy, thrifty way. In minutes, this *Electronic* Wheel Balancer helps you cut repair costs, slash "downtime" and increase driving safety.

No matter how large the vehicle—front or rear wheels, single or dual, on single or tandem axles are easy to balance this *Electronic* way. You eliminate vibrations and pounding on front end assemblies, tie rod ends and bushings—*without removing the wheels from the vehicle!*

Easy to operate, the Stewart-Warner *Electronic* Wheel Balancer registers vibrations as small as 2/1000 of an inch! Tells exact degree of unbalance with *less* work, in *less* time than any other method!

This complete, self-contained unit pays for itself by avoiding repair costs *in advance!* Assures greater operating safety and cuts maintenance costs on every truck or car you operate.

WRITE TODAY for complete, free details on this amazing, easy-to-use unit—created and produced *for you* by Stewart-Warner only! Address inquiries to Dept. D-20 for rapid reply.

Stewart-Warner Corporation

1826 Diversey Parkway, Chicago 14, Illinois

Clinic to Save Drivers

This Safety Laboratory housed in a drop frame van made available by the Trailmobile Co. and pulled by a Ford tractor, is touring New York State under the joint sponsorship of the New York State Motor Truck Association, the Division of Safety of the State of New York, and the New York State Teamster Council of the A. F. of L in an effort to discover and correct personal driving deficiencies

NOW...

THE NEW LORRAINE

More than ever... the World's Finest Driving Light

New Safety for Night Driving

Here's a driver's dream of a spotlight! It's the new Lorraine—more convenient, more dependable, more ruggedly durable... more than ever the World's Finest Driving Light!

Just a flick of the fingertips provides positive control of the new Lorraine Rotary Switch. The sealed beam lamphead rolls smoothly, continuously, through a full 360 degree radius. Exclusive Lorraine Wireless Construction provides complete protection against shorts.

Equipped with a powerful sealed beam unit, a Lorraine gives better vision on the highway, more convenience in town, greater safety anywhere! Unexcelled mechanical efficiency is assured by specially designed brass bevel gears. And one model fits right or left hand mounting.

For greater night-driving efficiency, less night-driving fatigue, outfit your fleet with Lorraine Driving Lights. Write for detailed information and name of jobber nearest you.

NEW LORRAINE UTILITY LIGHT FOR ROOF MOUNTING

Lamphead turns full 360 degrees both horizontally and vertically. Equipped with leakproof bracket. Illuminates working areas to the front, rear, left, right or ground. Ideal for snowplows, maintenance vehicles, wreckers, service vehicles and utility trucks.

APPLETON ELECTRIC COMPANY

Manufacturers of Appleton and Lorraine Spotlights

1724 WELLINGTON AVENUE **CHICAGO 13, ILLINOIS**

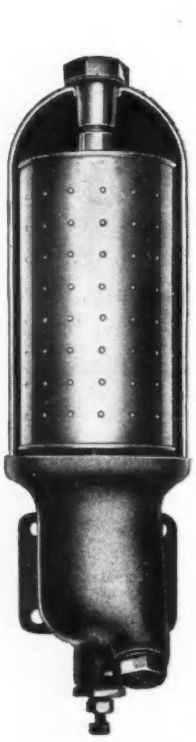
IF YOU USE FILTERS

(1) *To Improve Engine Performance*
(2) *To Cut Lube Oil Costs*

A Few Cents More For a BETTER FILTER is a Logical Expenditure

A good oil filter is the one accessory that can do more to reduce engine maintenance costs, provide thousands of more miles of satisfactory performance and drastically reduce lube oil bills, than anything else.

A clean engine means less chance of gum and sludge accumulations,—means less mechanical overhauling,—means improved lubrication for longer engine life and fewer oil changes.



Selected on performance and competitive tests by America's foremost builders and designers of gasoline and Diesel engines and motorized equipment—MICHIANA Filters do the job that a filter is designed to do. They are made with this idea in mind and because of long experience and large production facilities, they cost but little more For the job they do they really cost you much less.... MICHIANA PRODUCTS CORPORATION, Michigan City, Ind.

Made for engines up to several thousand horsepower capacity—with uniformly high quality engineered replacement cartridge Re-Fills.

MICHIANA OIL FILTERS

SAE Annual Meeting

Continued from Page 81

But he had some answers to muffler shortcomings. "We are fortunate in having at our disposal several coated products known as terne plate, zinc grip and aluminized steels," he stated. "The price of terne plate is about 30 per cent more per pound than mild steel. Its use can best be justified on systems where exhaust condensation is a big item, and units are subject to severe weather conditions . . . Aluminized steel is exceptionally resistant to rusting and offers a fair degree of corrosion resistance. It does not require paint and will withstand temperatures as high as 1500 deg. F. The cost, however, is more than twice the cost of mild steel."

Zinc grip is fairly resistant to normal weather conditions but does not stand up under excessive heat. Like terne plate it is about 30 per cent more costly than mild steel. Considerable development work is being done on hot aluminum dipping, he said, but the process requires more expensive equipment and greater skill in fabrication. Porcelain coated steels can stand temperatures up to 1500 deg F. and may be used eventually if the cost can be kept down.

Mr. Bryant recommended stainless steels in light gages as giving longer life and reduced weight. They cost from eight to seventeeen times as much as mild steels, and cost has limited extensive use to date. However, he said, field experience has proved that the extra cost is more than offset in added muffler life. Aluminum is limited to low temperature exhaust systems because this material crystallizes and fractures. Aluminum alloys may be the answer to low cost and more durable metal. For exhaust lines that have a tendency to corrode from the inside but which do not show outside rusting, Mr. Bryant recommended stainless clad steel. Its cost is about half that of stainless steel.

Owner vs Manufacturers

Prepared discussion papers by Paul Huber, of Fram Corp.; F. B. Lautzenhiser, of International Harvester Co.; and J. W. Sinclair, of Union Oil Co., were in general complimentary to the speaker, but criticism initiated by Hoy Stevens of ATA led off a wave of dissention by at least ten others in the room. Stevens pounced on muffler manufacturers, criticizing them for a product that fails prematurely, that does not muffle sounds satisfactorily, that is inefficient in that it creates excessive back pressures and cuts power output of the engine. He warned that unless adequate mufflers are built by manufacturers, trucks will get into serious trouble with the public, for noise, he said, is becoming even more of a nuisance with higher speeds, heavy loading and higher horsepower engines.

Julius Gaussoin, of Silver Eagle Co., also took issue with statements made by Mr. Bryant. New dvelopments and improvements are being made in some sec-

(TURN TO PAGE 196, PLEASE)

America's Most Outstanding Truck Values

—with more power than ever!

Here are the models to make motor-truck history. These new Chevrolet P·L trucks are advance-designed for the heaviest loads, the roughest roads, the lowest cost per trip.

They are far ahead in popularity, performance, payload, price—and they are the *most powerful trucks Chevrolet has ever built.* There is a P·L truck for every trucking job and every one is a real leader on the job.

Chevrolet Motor Division, General Motors Corporation
Detroit 2, Michigan

Leading with all these PLus Features:

• TWO GREAT VALVE-IN-HEAD ENGINES: the New 105-h.p. Load-Master and the Improved 92-h.p. Thrift-Master—to give you greater power per gallon, lower cost per load • THE NEW POWER-JET CARBURETOR: smoother, quicker acceleration response • DIAPHRAGM SPRING CLUTCH for easy action engagement • SYNCHRO-MESH TRANSMISSIONS for fast, smooth shifting • HYPOID REAR AXLES—5 times more durable than spiral bevel type • DOUBLE-ARTICULATED BRAKES—for complete driver control • WIDE-BASE WHEELS for increased tire mileage • ADVANCE-DESIGN STYLING with the "Cab that Breathes" • BALL-TYPE STEERING for easier handling • UNIT-DESIGN BODIES — precision built.

CHEVROLET

P·L*

ADVANCE-DESIGN TRUCKS

P*opularity L*eaders
Official truck registration figures for 1949 show Chevrolet trucks preferred over the next two makes combined—proof of the owner satisfaction they earn through the years.

P*erformance L*eaders
The new Chevrolet P·L trucks give you high pulling power over a wide range of usable road speeds — and on the straightaway, high acceleration to cut down total trip time.

P*ayload L*eaders The rugged construction and all-around economy of Chevrolet P·L trucks cut operating and repair costs—let you deliver the goods with real reductions in cost per ton per mile.

P*rice L*eaders The Chevrolet truck line is the very lowest priced line in the field—saves on initial cost. What's more P·L trucks give owners dollar and cents savings in maintenance and operation.

CHEVROLET

SAE Annual Meeting

Continued from Page 194

tions of the country, he said. Better mufflers can be made—and we as fleet operators *want* them.

Warren A. Taussig, of Burlington Truck Lines, took the floor to criticize present day muffler design from the standpoint of efficiency and sound control. As a fleet operator I will pay for a better muffler, but have never had the chance, he said, for manufacturers simply do not build one that meets our requirements.

H. H. Allen, of Interstate Commerce Commission, warned the industry that unless improvements are forthcoming truck operators can expect new legislation imposing regulation and control of trucks and buses.

Engine makers arose to the occasion, to defend themselves. Manufacturers of engines, it was stated, have little control over the type and design of the muffler used on the trucks. However, they promised that they would be glad to subject various mufflers to exhaustive tests to determine which were acceptable from the standpoint of efficiency and noise control.

All these charges did not answer the question at hand—when can we as fleet operators get a muffler that will last the life of the truck at a price that is reasonable—and when will manufacturers come up with a device that will muffle exhausts and still keep down back pressures? The question is hot, the answer is still on makers' drawing boards, and fleetmen anticipating trouble ahead, know that they have the power to call the trick. It would appear that they will force improvements along these lines in the near future.

Piston Ring Design and Wear

Leading off the program was a paper on "Piston Ring" Design and Application and Their Effect on Wear," presented by A. M. Brenneke, chief engineer, Perfect Circle Corp. Mr. Brenneke listed three major causes of cylinder wear as abrasion, corrosion and scuffing. Dirt is caused by airborne dirt, he stated, and corrosion is brought about chiefly through low coolant temperatures due to design or, more often, operating conditions. Scuffing may be the result of cylinder finish, cylinder material, cylinder design, piston design, ring design or material, ring application, or various combinations of these factors.

Top compression rings are the most important consideration in abrasive wear, the speaker said. In an effort to cut wear tendency, width of top rings should be as great as the output, scuffing tendencies and space limitations of the engine design will permit. Selection of material should be made carefully. Heat-treated chrome-moly alloy cast iron material has worked satisfactory for diesel applications, and lately chrome-plated top compression rings have been widely adopted in diesels. Locating the top ring on the piston is an important consideration, Mr. Brenneke said. When the piston is at the top of the stroke, the top ring should not travel beyond the end of the water jacket. A wide top land protects the ring from direct effects of combustion and reduces its operating temperature. The top ring should also be well supported by a strong second land if it is to do a good sealing job and enjoy a low wear rate.

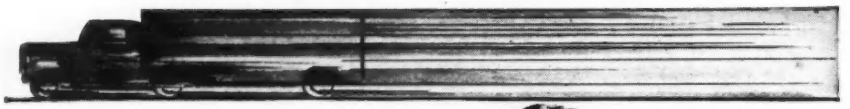
Other papers presented Tuesday were of interest to designers and engineers, primarily. These included information on the measurement of detonation, the ignition of fuels by rapid compression, precombustion reaction in a spark ignition engine, and a study of mixture distribution in a modern multi-cylinder engine.

On Gasoline Economy

One hundred and fifty miles per gallon is possible, said R. J. Greenshields, director of research, Shell Oil Co., in his paper on Tuesday. Mr. Greenshields showed how he had actually obtained 54 miles per gallon by changing gear ratio, by reducing tire to ground contact, adding SAE 10 grade lubricant, increasing the compression ratio from 6.5 to 10 to 1, removing engine accessories and adding extra air to tires. By accelerating the car to a speed of 20 mph and letting it coast down to 5 mph, however, he was able to obtain an additional mileage in a test run, bringing the total figure to 149.95 miles per gallon.

Other papers of interest to passenger

(TURN TO PAGE 198, PLEASE)



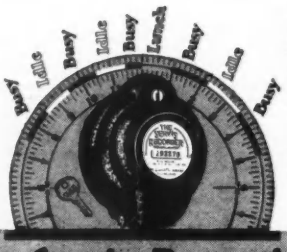
"I SEE HERE by the *Servis Recorder* chart," said the boss, putting his finger on a "gap" in the truck's travel line, "that Steve stopped somewhere, from 2:15 to 3:30 yesterday. Now, he started out with a full afternoon's schedule—and yet, although the truck stood idle somewhere *for over an hour,* he reports in *on time.* He certainly must have SPEEDED UP! And that is both dangerous and wasteful."

Dangerous

Insurance companies say that most ACCIDENTS are due to speeding, and most speeding is due to trying to "make up" lost time. That's why many insurance companies recommend that fleet owners equip their trucks with *Servis Recorders.*

Wasteful

Also, speeding wastes GAS—often ruins TIRES—and doesn't do the MOTOR any good. Now, even when delays are *not* the driver's fault, he is naturally tempted to "cover up" by speeding to get in on time.



You can't afford that risk! Send today for our folder, "How to Prevent Trucks from Speeding and Having Accidents." It's free.

THE SERVICE RECORDER CO.
1375 Euclid Ave., Cleveland 15, O.

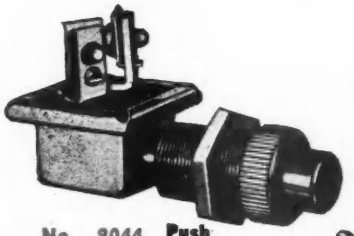
The Servis Recorder
Tells Every Move Your Truck Makes

YOU CAN BEAT & ABUSE

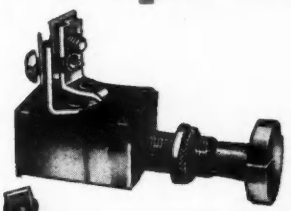
..COLE-HERSEE Switches

but you can't beat them for

Quality & Ruggedness, Performance & Dependability



No. 9044 **Push Button Dust-proofed Starter Switch**

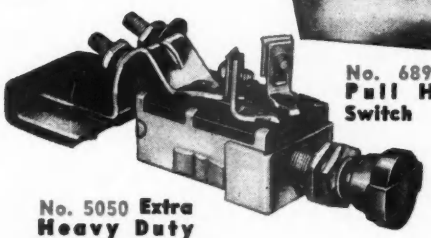


No. 5007 **Heavy Duty Switch**

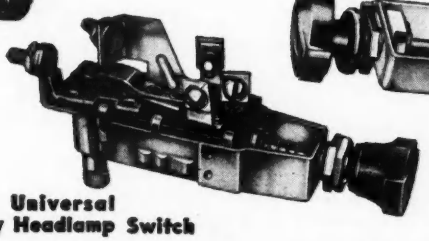
No. 5027 **Extra Heavy Duty Switch**

No. 1180 **Trailer Connector Box and Grip-tite Cable Protector**

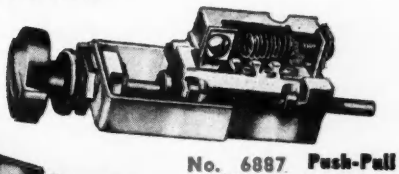
No. 6896 **Push-Pull Heater Switch**



No. 5050 **Extra Heavy Duty Switch with Circuit Breaker**



No. 7123 **Universal Heavy Duty Headlamp Switch**



No. 6887 **Push-Pull Heater Switch 12 volt**

COLE-HERSEE CO.

20 Old Colony Ave., Boston 27, Mass.

Manufacturers of

Headlamp Switches · Panel Switches · Plugs & Sockets · Door Switches · Starter Switches · Trailer Connectors · Push-Pull Switches · Pilot Lights · Heater Switches · Toggle Switches · Foglight Switches · Fuse Blocks

SAE Annual Meeting

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car owners were those presented on automatic transmissions designed by Chevrolet and Studebaker. Design, construction and operating information was given by R. S. Plexico and R. E. Kaufman, of Chevrolet, and H. E. Churchill, of Studebaker.

Of Brake Drum Materials

Brakes and brake drums received considerable attention, with papers being presented on Brake Drum Materials by Fred Walls, of International Nickel Co., and on Brake Lining Characteristics, by J. G. Oetzel, of Warner Electric Brake Mannfacing Co.

Mr. Walls listed nine requirements of a material that would produce an ideal brake drum as: high thermal conductivity; low coefficient of thermal expansion; high specific heat; high melting or softening point; high emissivity factor; high coefficient of friction; low density; low modulus of elasticity and high heat capacity per unit volume.

Chemical and mechanical as well as design problems, however, confront the foundries producing heavy-duty brake drums. As a result compromises in choice of metal, reinforcement, cooling qualities, etc., are necessary. If a manufacturer could be certain that the brakes on an individual vehicle would be operated under predetermined conditions, he could select a specific cast iron and design within relatively small factors of safety and without resorting to compromises, Mr. Walls said. However, uncontrolloble variables in environment such as operation, traffic, topography and atmosphere must be considered. The life expectancy of a brake drum can be summed up as follows: resistance to thermal fatigue; resistance to wear and galling or scoring; resistance to mechanical breakage. Thermal fatigue is a function of design, expansion, conductivity, rate of heat input and the number of cyclic heatings. Wear and galling are functions of structure, hardness and fusion point. Mechanical breakage is a function of strength and design.

ATA Progress Report

The Equipment and Operations Section of the American Trucking Associations, Inc., attended a meeting of the Society of Automotive Engineers, Electric Equipment Committee, to request of the Committee that it draft two specifications, one for tractor jumper cables, and another for heavy-duty wire insulation to be used on commercial vehicles.

Lewis C. Kibbee, automotive engineer. pointed out that standardized jumper cable sizes are needed so that cable connector manufacturers, trailer manufacturers and operators may be assured of uniform sizes of cables when they purchase cables from various manufacturers, in order that they may design their products to fit these standards.

The Committee was asked to work out cable specifications which would establish wearing characteristics for the outer abrasion resistant cover which would assure the inclusion of superior quality materials in the outer coat of the cable.

With regard to the wire insulation, Mr. Kibbee asked that a specification be drafted for inclusion in the S.A.E. Handbook which would cover superior insulation for heavy service in commercial vehicles.

Mr. S. H. Wetzel of the Electric Auto-Lite Co. was appointed by the Committee to work with Mr. Kibbee on the jumper cable specifications, and Mr. E. R. Olson of the Belden Mfg. Co. to help prepare the wire insulation specifications.

James C. Zeder

James C. Zeder, Chairman of the Engineering Board of Chrysler Corp., was elected president of the Society of Automotive Engineers for 1950. Mr. Zeder rose to his present position at Chrysler when its Engineering Board was first formed in 1946, having previously been chief engineer of all Chrysler laboratories since 1933.

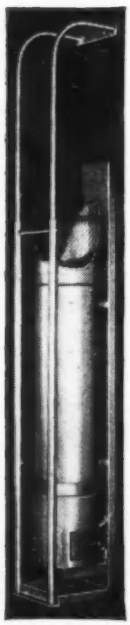
END

(Please resume your reading on P. 82)

WANT TO PUT THE HEAT ON SOMETHING?

YOU CAN DO SO, PROFITABLY

WITH CARGO-GUARD HEATER STAMPINGS



ON the CARGO GUARD HEATER you set the automatic thermostat at the temperature required. A stream of warm protective air circulates into the cargo area of your vehicle. This unit operates *independently* of the motor or battery. Uses convection method of space heating — fast, economical, efficient — rated at 20,000 Btu. The unit needs *only 1 sq. ft.* floor space.

OPERATES ON CLEAN-SAFE BOTTLED GAS

Bottled gas is non-toxic — no smoke — no ashes. It's the same gas many housewives use in kitchen ranges. Fool proof regulators. Automatic Thermostat. Automatic Pilotstat. *No maintenance expense — nothing to wear out.* Here is low-cost, effective cargo protection. If you need to put the heat on something, write for details and prices on CARGO GUARD.

MAIL TODAY

CARGO GUARD COMPANY—A DIVISION OF SPECIALISTS IN BOTTLED GAS PRODUCTS STAMPINGS

CARGO GUARD COMPANY, 315 WEST 4th ST., DAVENPORT, IOWA CJ

Gentlemen: Please send more information on CARGO GUARD HEATER

☐ Common Carrier; ☐ Contract Carrier; ☐ Private Fleet; ☐ Other

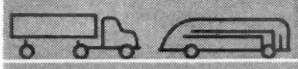
Cargo you want to protect?_____

YOUR NAME_____

FIRM NAME_____

CITY_____ STATE_____

EVERYTHING IS SMOOTHER ON THE



DELCO LINE

SMOOTHER RIDE . . . because the car, truck or bus is equipped with the *right* type of shock absorber for its particular springing and suspension. Only Delco makes all types —direct acting, double acting cam and lever, single acting and knee-action.

SMOOTHER RELATIONS . . . because Delco has the engineering and manufacturing background to deliver the goods on schedule, correctly designed, in correct quantity. Close association with the automotive industry has taught Delco to produce under pressure.

SMOOTHER MAINTENANCE OPERATIONS . . . because fleet owners take advantage of United Motors Service nationwide distribution of Delco replacement units and parts. Then, too, Delco shock absorbers require less maintenance—provide uniform performance for more miles.

SHOCK ABSORBERS FOR EVERY REQUIREMENT

DELCO PRODUCTS
DIVISION OF
GENERAL MOTORS CORPORATION
DAYTON, OHIO

Get Complete Shock Satisfaction **P.D.Q.**
Performance
Design
Quality
Put the Delco Line on your Equipment

UNITED SERVICE MOTORS

DELCO SHOCK ABSORBERS
A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

DELCO HYDRAULIC SHOCK ABSORBERS

Introducing

Continued from Page 98

. . . LEROY A. CRITCHFIELD, as director of the chemical and metallurgical laboratory of the Standard-Thomson Corp., Dayton, Ohio.

. . . M. R. MINNICK, general manager of sales and supervisor of the railway equipment div., H. D. MALONE, manager of sales of industrial products div., D. W. DAWSON, manager of product development div., for the American Welding and Manufacturing Co.

. . . KENT D. FULLERTON, new sales manager of the Electric Heat Control Co.

. . . BRUCE S. WILLIAMS, as assistant to the president, Russel Mfg. Co.

. . . NORMAN ROTHENHEGER, promoted to regional manager in Region I, Philadelphia headquarters, Perfect Circle Corp.

. . . A. K. HAMILTON, appointed vice president by the board of directors of the Commercial Solvents Corp.

. . . DAVID C. PETERSON, named director of engineering and manufacturing of Division One of Stewart-Warner Corp.

. . . WALTER F. MUNFORD, elected vice president in charge of operations of the American Steel & Wire Co.

. . . THOMAS H. HOLDEN, assistant manager truck and fleet sales of Ford Div., Ford Motor Co.

. . . GEORGE T. STUFFLEBEAM, appointed manager of transportation methods research for Remington Rand, Inc.

. . . R. B. HAYNES, appointed to the newly created position of vice president in charge of manufacturing of the Dana Corp., Toledo, Ohio.

. . . JAMES BARDSLEY, as general manager of the Pacific Coast Division, Berkeley, Cal., of the Trailmobile Co.

. . . JOHN F. MCLEAN, JR. appointed manager truck and fleet sales of Ford Div., Ford Motor Co.

. . . EARL BARTHOLOMEW, Buffalo representative; H. C. FICKEN, representative in South Georgia; REX GILCREST, representative in Chicago; R. W. FREDERICKS, representative in Seattle; J. B. GILBERT, representative in Oakland; all promoted by the Champion Spark Plug Co.

. . . JOHN J. BYRNE, manager of national accounts southern div. of Mack-International Motor Truck Corp. in Atlanta.

. . . HENRY F. BOLDT, appointed Oklahoma City branch manager for the Trailmobile Co.

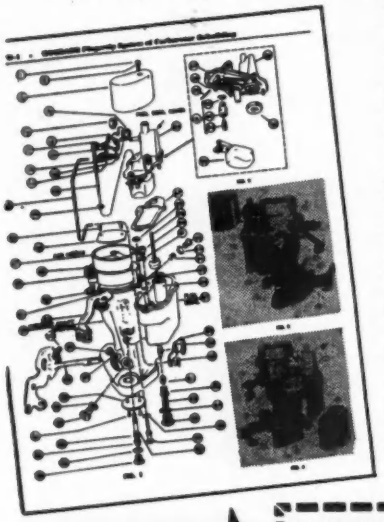
(TURN TO PAGE 202, PLEASE)

Now you can easily rebuild carburetors in your own shop with the new

HYGRADE FINGERTIP SYSTEM

You'll have real insurance against "down-time" because you *know* that every part that wears has been replaced with a *brand new part* from the Hygrade kit. Without leaving the shop – in a matter of hours – every mechanic can learn to dis-assemble and rebuild a carburetor.

All the mumbo-jumbo that mechanics used to associate with carburetor rebuilding is gone. Packed in every kit are clear step-by-step instructions, arranged in sequence of assembly which tie in with large exploded-view drawings and photos. The location of parts on these pictures is so easy that parts practically fall into place by themselves.



THE HYGRADE FINGERTIP KIT

ALL THE PARTS the mechanic needs for rebuilding a carburetor are literally at his fingertips...packed and labeled in separate envelopes for each assembly operation. Work is done step-by-step, envelope by envelope. (As each assembly operation is completed all the parts in that envelope are used up.)

For real insurance against "down-time", write us – giving the make and model of one of the carburetors you use. We will send a sample instruction sheet. Convince yourself by actual test, how easy carburetor rebuilding can be.

SAVE GAS • SAVE ON DOWN-TIME

FREE! SEND FOR SPECIMEN INSTRUCTION SHEET

HYGRADE PRODUCTS DIVISION
35-41 Thirty-fifth Street
Long Island City 1, N. Y.
Send me a Hygrade Fingertip Instruction Sheet on rebuilding Carburetors for model.....
Make..... Part no.....
Firm name.....
Attention of .....
Address .....
City ..... State .....

You Can Rely on KLIXON Controls

KLIXON CIRCUIT BREAKERS Safeguard primary and secondary electrical circuits

KLIXON THERMO-STATS provide Accurate Heating and Cooling Control

KLIXON Thermo-Snap SWITCHE Control air conditioning, booste heaters and other equipment

For complete safety and electrical circuit protection in buses, trucks and other mobile equipment, it will pay you to specify and use Klixon Circuit Breakers, Thermo-Snap Switches and Thermostats.

Take a typical bus as an example. Here Klixon Controls will provide positive protection in the following applications:—Klixon Thermostats will assure uniform heating and cooling from the heater and air conditioner. Klixon Circuit Breakers protect all primary and secondary circuits. Klixon Thermo-Snap Switches and Circuit Breakers safeguard booster heaters and other equipment.

Designers of electrical circuits in motor vehicles as well as builders of auxiliary equipment will find that it pays to use Klixon Controls and Circuit Breakers. These accurate, dependable controls take a worry off the operators' minds by giving safety and protection mile after year . . . in spite of the severe abuse encountered in bus service. Their operation is unaffected by road shocks, vibration and other operating conditions.

Write for information and samples, today. Our field engineers are available to help you with your specific problems.

KLIXON

SPENCER THERMOSTAT *Division of Metals and Controls Corp.* **1602 FOREST ST., ATTLEBORO, MASS.**

Kester Solder

Kester Radiator Solder, Flux-Core, a specialized solder with a higher tin content (50%) and super activated flux, is now available to the trade. The finest solder made for fast, quality radiator work.

Uniform

All Kester Solders are made only from newly mined grade A tin and virgin lead. Fluxes are chemically and scientifically correct. Kester's uniform flux content assures greater dependability.

Efficient

Using the right solder for the job increases efficiency, speeds up the work. Kester Radiator Solder for radiator work; Kester Acid-Core Solder for general work; Kester Plastic Rosin-Core and "Resin-Five" Core Solders for automotive electrical work.

Kester Solder Company
4201 Wrightwood Ave., Chicago 39
Newark, N. J. Brantford, Canada

Send for free 20-page booklet "Soldering Simplified"

KESTER SOLDER

The Mechanics Standard since 1899

Introducing . . .

Continued from Page 200

. . . CARL A. LINDBLOM, chief engineer of the newly established Advanced Engineering Group at the Motor Truck Division of International Harvester Co.

. . . ROBERT PRICE, who has been appointed representative by the Auto-Lite Battery Corp. for the New York Metropolitan Area.

. . . W. S. BLAKESLEE, JR., assistant general sales manager for Gar Wood Industries, Inc.

. . . RICHARD H. "DICK" BANCROFT, executive engineer of the Perfect Circle Corp. of Hagerstown, Ind.

. . . WILLIAM A. NORTON, appointed sales representative for the Dill Mfg. Co., Cleveland, Ohio.

. . . FRED DENIG, manager of the Production Department, and DR. G. FRANK D'ALELIC, named vice president and manager of the Research Department, Koppers Co., Inc.

. . . RAYMOND Z. OSWALD, as vice president in charge of replacement sales of The Cleveland Graphite Bronze Co.

. . . JULES P. KOVACS who has been named vice president in charge of engineering for Purolator Products, Inc.

. . . W. G. KLAUS, as office sales manager, and G. F. DECOURSIN, as field sales manager of The Four Wheel Drive Auto Co.

. . . GEORGE R. JOHNSON, appointed sales manager of the Automotive Chemicals Div., of E. F. Drew & Co., Inc.

. . . S. W. ROLPH elected president, The Electric Storage Battery Co., Philadelphia.

. . . GEORGE S. LAMSON named to the position of manager, Replacement Division, Thermoid Co., Trenton, N. J.

(TURN TO PAGE 204, PLEASE)

Built 2700 lbs. lighter with U·S·S COR-TEN

IN this 4500-gallon Trailmobile unit almost 10% of the payload is *bonus* gallonage. Because the COR-TEN tank weighs 2700 lbs. less than if it had been built of plain carbon steel, 432 gallons travel at no cost—and there's 2700 lbs. less weight to haul on empty runs.

How does this affect operating costs? Plenty. Figuring the cost of gasoline delivery conservatively low at ½ cent per gallon these free-riding gallons save the marketer $2.16 on every trip the truck makes. Such operating savings very quickly pay off the little extra it costs to build light with COR-TEN, actually pay back the entire cost of the truck in a matter of months.

All weight saving in your transportation units is profitable—but it pays the *biggest* dividends when you build light with U·S·S COR-TEN. That's because it costs so little to reduce weight with this superior high-strength steel. In fact, leading builders tell us, in some cases it costs not a cent more to build light with COR-TEN than it costs to build heavy with ordinary structural steel.

Find out how readily you can apply U·S·S COR-TEN to *cut the weight and cut the operating cost* of your equipment. Find out how this most famous of the high strength steels—and the most widely used—will reduce maintenance costs by its greater resistance to atmospheric corrosion, to abrasion, impact and wear. A letter to our nearest office will put you in touch with our engineers who pioneered U·S·S COR-TEN and who will gladly give you all the facts.

AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO · CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH & CHICAGO
COLUMBIA STEEL COMPANY, SAN FRANCISCO · NATIONAL TUBE COMPANY, PITTSBURGH · TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

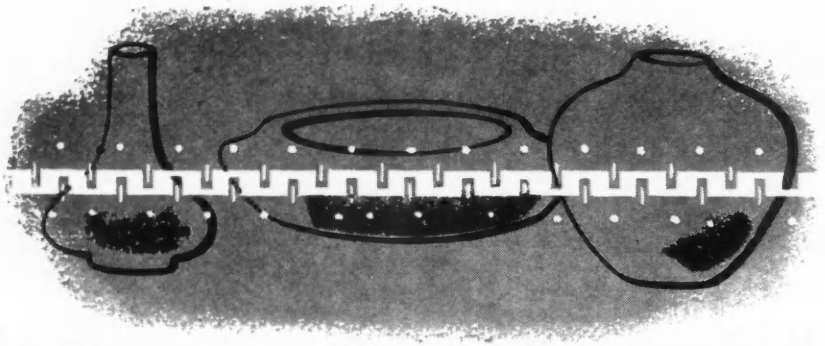
USS

U·S·S HIGH STRENGTH STEELS

U·S·S COR-TEN · U·S·S MAN-TEN · U·S·S MANGANESE-NICKEL-COPPER

9-2070

UNITED STATES STEEL



ONE BASIC DESIGN

RIGHT FOR EVERY TANDEM APPLICATION

DOUBLE DRIVE SIX-WHEELER

TRAILING AXLE SIX-WHEELER

TANDEM AXLE SEMI

SIX-WHEEL FULL TRAILER

PORTABLE SPECIAL MACHINERY

SIX-WHEEL CRANE CARRIER

RUGGED Rigid material specifications plus proved design produce maximum strength with minimum weight to give the Hendrickson Tandem its rugged quality.

SIMPLE Design which has undergone the refinements of many years assures a clean unit—stripped of all "development bugs."

COMPACT *Equalizer beam* and large *ball and socket joints* combine to give the Hendrickson tandem maximum flexibility without sacrifice of weight or space. Again, the test of time has eliminated all superfluous parts.

HENDRICKSON TANDEM

"Follow the Leader"

HENDRICKSON MOTOR TRUCK COMPANY

8001 West 47th Street • Lyons (Chicago Suburb) Illinois

Introducing

Continued from page 202

. . . EDWARD N. COLE, as works manager for the Cadillac Motor Car Div.

. . . C. H. GLASIER, promoted to manager of distribution, and J. H. FOX, named assistant manager of distribution for the Air Reduction Sales Co.

. . . JOHN MCVEIGH, appointed special development engineer of Kennametal, Inc.

. . . A. E. MCINTYRE, as general manager of Malsbary Mfg. Co.

. . . JOHN M. GLEASON, chairman of the State and Local Officials' National Highway Safety Committee, president of the International Assn. of Chiefs of Police. EARL T. NEWBRY, vice chairman of the officials' committee, president of the American Assn. of Motor Vehicle Administrators. WAINWRIGHT BRIDGES, executive secretary of officials' committee.

. . . WESLEY WHITE, sales representative for 11 Western states, for the South Gate Brake Co., South Gate, Cal.

. . . R. G. GEHLSEN, appointed sales manager of Mines Equipment Div. of the Joy Mfg. Co.

. . . H. B. ZEPPENFELD, manager industrial sales, Mines Equipment Div. of the Joy Mfg. Co.

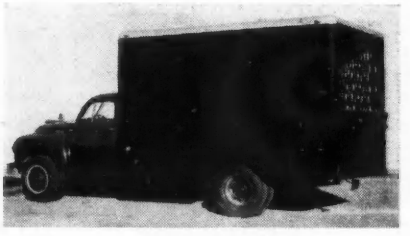
. . . KERMIT R. SADLER, appointed general traffic manager; HENRY B. THACKSTON, appointed sales development manager of the southeastern division with headquarters in Atlanta, and OTTO B. BRUCE, appointed manager of the Jacksonville, Fla., district of the Replacement Tire Sales division of The B. F. Goodrich Co.

. . . JAMES A. BARDSLEY, as manager of the West Coast division of The Trailmobile Co.

END

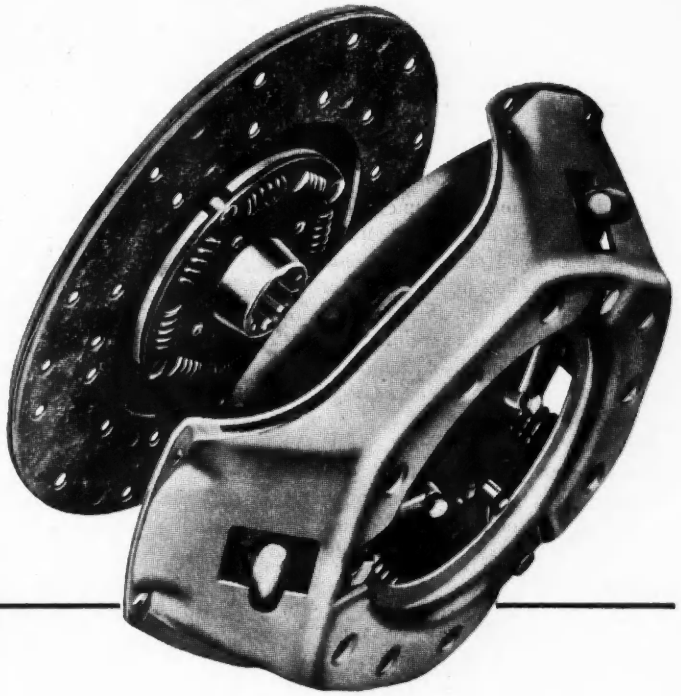
Please resume your reading on P. 100

Mid West Van



All-steel, all-welded, heavy-duty van is the newest addition to the farm and stake truck body lines of the Mid West Body and Manufacturing Division. Vans of this type are offered in any length, width or height

In stop-and-go traffic driving, Long clutches give smooth, positive, effortless performance. At highway speeds, the semi-centrifugal construction means increased torque capacity—less slippage, less wear. They have equipped millions of cars, trucks, buses and tractors since 1922.



LONG

Clutches and Radiators

- EFFICIENT ENGINEERING
- VOLUME PRODUCTION
- TIME-TESTED PERFORMANCE

Long radiators have been used throughout the automotive world since 1903. Fin-and-tube design and construction provide clean, unobstructed water courses . . . maximum heat exchange. In heavy-duty commercial engines or high-speed passenger cars, this means engines that run cool.

A PRODUCT OF B-W BORG-WARNER

LONG

CLUTCHES • RADIATORS • OIL COOLERS

LONG MANUFACTURING DIVISION
BORG-WARNER CORPORATION
Detroit 12 and Windsor, Ontario

Magnaflux-Magnaglo Cuts Overhaul Costs

In recent months, numerous fleets and motor overhaul shops have installed the new Magnaglo for inspection with Magnaflux of engine, steering, and drive components during overhaul. Magnaglo is the latest refinement for scientific inspection with Magnaflux, to make it still more quick and simple as used during overhaul.

The use of Magnaglo is most important on crankshafts, steering parts including spindles, and connecting rods, and gears. As soon as the fleet unit is torn down and parts cleaned, they are inspected on the Magnaflux unit.

Parts are magnetized by high amperage current (with low safe voltages) and Magnaglo liquid is flowed over the surface. The fluorescent Magnaglo particles are held magnetically at any visible or invisible crack in the part, and build up a glowing line of light which is readily seen when parts are inspected under black light. The crack is so obvious then, that it is hard to miss. In fact it has been said that the Magnaglo indication "looks for the inspector," rather than the inspector having to look for the crack.

When a cracked crankshaft is found, intelligent decisions should be made to find out whether or not it can be reground or salvaged. Defective crankshafts and other parts do not go back into service, and failures do not occur from cracked parts soon after overhaul, which otherwise is very often the case.

The larger fleets are installing their own Magnaflux unit, using Magnaglo for safety inspection. Blocks can be inspected with Magnaflux at the rate of about three minutes each, using ordinary labor who can be trained in a few days to do the job reliably. The block is handled on an overhead electric hoist, and lowered into a coil. The KA-3 Magnaflux unit supplies high amperage (but low voltage) electric current to the coil which magnetizes the block. Magnaflux powder is applied to the surface, and is held by magnetic attraction, like a horseshoe magnet, at every crack. This line of powder is then very visible and marks each crack distinctly.

When cracks are located in the block as received, the shop avoids the waste of machining and assembly which otherwise occurs.

JOBSERVATION

The most inflammable kindling wood is a chip on the shoulder

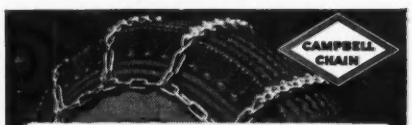
America's Leading HEAVY-DUTY TRUCK Manufacturers Standardize on LIPE CLUTCHES

★ for more miles between teardowns!
★ for less wear and tear on the truck!
★ for easier maintenance and replacement!

LIPE-ROLLWAY CORP.
SYRACUSE, N. Y.

See the new DIAMOND T

THE TRUCK OF LOWEST COST



CAMPBELL
Lug-Reinforced
TIRE CHAINS
THE CHAIN WITH THE SAW-TOOTH GRIP
U. S. Pat. No. 2,191,441—Canadian Pat. No. 379,271
CAMPBELL CHAIN Company
(International Chain & Mfg. Co.)
YORK, PENNSYLVANIA

YOU CAN DEPEND ON
McCORD GASKETS
MOST CAR AND TRUCK MAKERS DO
McCORD CORPORATION
Detroit, Michigan
Gaskets • Radiators • Mufflers
Pipes and Oil Retainers

Preferred BY THE MEN WHO DO THE WASHING

LACO FOUNTAIN BRUSHES

because They Give an Easier, Faster and Better Job

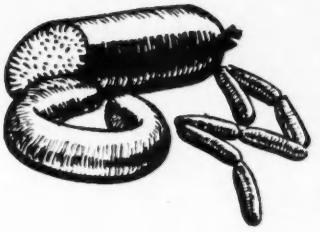
Handy valve on handle provides fingertip water control.
Available in either round or oblong styles with choice of horsehair, nylon or bristle brush fillers which are replaceable.

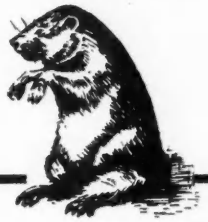
Bejin Cartage Company, one of Detroit's largest fleet operators standardizes on Laco Fountain Brushes.

● Laco Fountain Brushes cut fleet cleaning costs—for it washes better, faster, and is easier on the men doing the job. Brush is made for heavy duty use. All parts are made of aluminum alloy—strong but lightweight—a real time and money saver. Write for prices and name of nearest dealer.

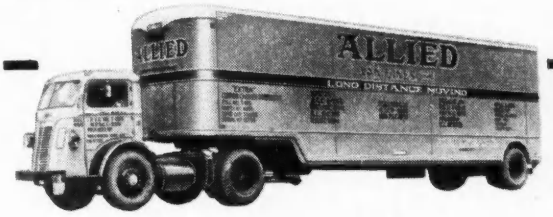
LAITNER BRUSH CO.
2000 Brooklyn Ave., Detroit 26, Mich.
BRUSH MANUFACTURERS SINCE 1855

Is "GROUND HOG" sausage or an animal?





Is "TRUCK TRAILER" just a trade name or a load carrier?



Those of us in the Trailer Industry know the answer to both of these questions.

Those of us here at KINGHAM know that a KINGHAM TRAILER is a LOAD CARRIER.

KINGHAM TRAILERS carry everything from "Soup to Nuts" from "Beans to Blimps" from "Shoe Laces to Shoe Making Machinery" from "Anything to Everything" and they carry it from "Anyplace to Everyplace" faster and more economically.

A load behind is a trip ahead

NATIONAL SALES **Kingham UNIVERSAL Trailers** NATIONAL SERVICE

KINGHAM TRAILER COMPANY, INCORPORATED **LOUISVILLE, KENTUCKY**

TRUCK AND BUS HEATERS
FOR CAB AND BODY
Hot Water System
To Heat
- *PERISHABLE DELIVERIES*
- *PASSENGERS*
- *DRIVER*

Send For Catalogue

TRUCK & COACH HEATER SALES
11611 Linwood Ave., Detroit 6, Michigan
DESIGNERS AND MANUFACTURERS OF CUSTOM BUILT HEATERS—HOT WATER SYSTEM

OVER 70% OF ALL MAKES OF TRUCKS AND BUSES ARE *Zollner* EQUIPPED
ZOLLNER
HEAVY DUTY PISTONS
ZOLLNER MACHINE WORKS FORT WAYNE, IND.

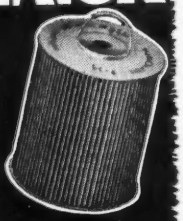
"finest of the fine"—
FOR HEAVY DUTY
WOLF'S HEAD
MOTOR OIL AND LUBES
100% PURE PENNSYLVANIA
Member, Penna. Grade Crude Oil Association

8 REASONS WHY SKF IS PREFERRED BY ALL INDUSTRY
INTEGRITY
CRAFTSMANSHIP
METALLURGY
TOLERANCE CONTROL
SURFACE FINISH
PRODUCT UNIFORMITY
ENGINEERING SERVICE
FIELD SERVICE
SKF
BALL & ROLLER BEARINGS

KING BOLT SETS

Solid Bronze Bushings
Complete with all parts
FOR ALL POPULAR CARS THRU 1949
Wohlert CORPORATION LANSING 5 MICHIGAN

PUROLATOR
Micronic OIL FILTER



Filters more abrasives . . . faster!

Better—but *not* more expensive!
SHULER AXLES
SHULER AXLE CO.
LOUISVILLE, KY.

THE CLEVELAND CHAIN & MFG. CO.
Cleveland 5, Ohio

Snap-on Tools
THE CHOICE OF BETTER MECHANICS

SNAP-ON TOOLS CORPORATION
8026-B 28th AVE. KENOSHA, WIS.

Permalux
FINER DECALCOMANIA
FIRST IN { APPEARANCE / ECONOMY / DURABILITY
Made With DuPont "DULUX"
Write Today for details
THE PERMALUX COMPANY
500 Rathbone Ave. • Aurora, Ill.

Private Truck Owners

Continued from page 120

tected from the elements.

Arthur C. Butler, director of the National Highway Users Conference, in a meaty talk on The Highway User Faces 1950, discussed the legislative outlook for the months ahead. Refer to page 72 for a complete story on the subject.

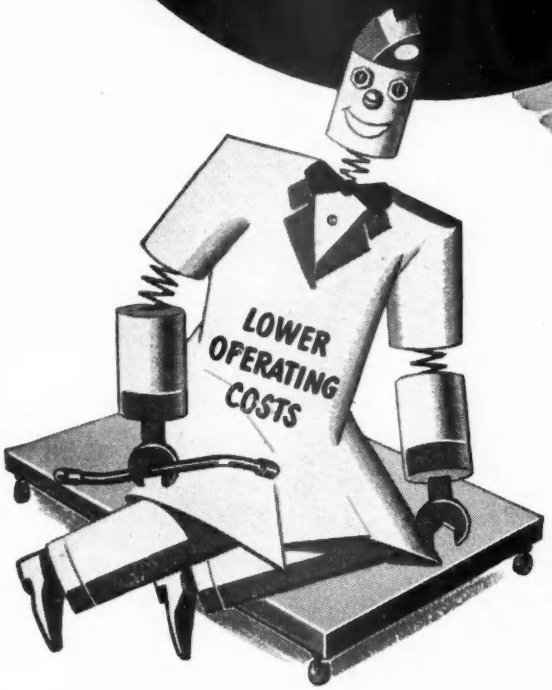
In his report on the Highway Safety Committee, Chairman E. G. Quesnel outlined the year's activities, emphasizing the highly valued work on "Systematized Fleet Safety Program," a series of safety articles "beamed" to management and explaining just what must be done to achieve greater highway safety and more efficient truck operation and HOW to do it. As the reader will recall, the subject matter was condensed and released again through the pages of COMMERCIAL CAR JOURNAL in 12 articles beginning in September, 1949.

A. M. Grean, Jr., of Ward Baking Co., and chairman of the Law Committee reported that the Committee on ICC Matters was dissolved late in the year and two new committees were created. The Law Committee was given the responsibility of handling Council matters resulting from legislation or regulations, both federal and state, and the ICC Regulations Committee was charged with the responsibility of handling proposals for new regulations or changes in existing regulations. And following, H. O. Mathews made his report on the ICC Regulations Committee, discussing some of the important regulatory problems that lie ahead.

In a paper on Agriculture on the Highways, Chas. B. Bowling told the Council that since only a small fraction of 1 per cent of farm products are sold direct to consumers, the distributor is a necessary intermediary between the producer and the consumer he never sees. But transportation costs must be kept to a minimum, for high freight

(TURN TO PAGE 210, PLEASE)

Put the UMS TWINS to work!



These twins are ready to work for you when you make your United Motors distributor your single source for parts, equipment and service on the United Motors lines.

You will get original-equipment material of uniform high quality . . . your service needs will be handled with factory-like efficiency . . . you will be taken care of promptly whether you have two vehicles or two thousand!

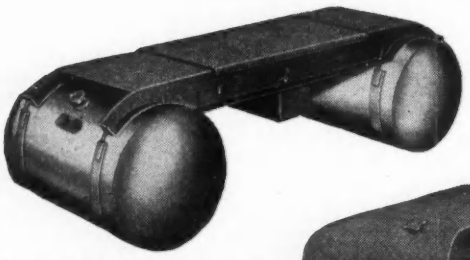
Such a policy will give you the twin benefits of *lower maintenance costs* and *lower operating costs*. Talk this over with your United Motors distributor.

UNITED SERVICE MOTORS

UNITED MOTORS SERVICE

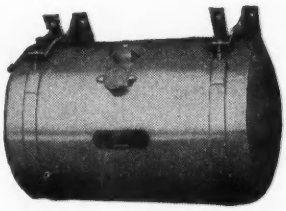
DIVISION OF GENERAL MOTORS CORPORATION • GENERAL MOTORS BUILDING, DETROIT 2, MICHIGAN

DELCO Batteries
AC Gauges, Speedometers and Rebuilt Fuel Pumps
DELCO Auto Radios
SAGINAW Jacks
MORAINE Engine Bearings
DELCO Radio Parts
HYATT Roller Bearings
DELCO Home Radios and Television
INLITE Brake Lining
DUREX Gasoline Filters
HARRISON Heaters
DELCO Shock Absorbers
NEW DEPARTURE Ball Bearings
GUIDE Lamps
HARRISON Thermostats
DELCO-REMY Starting, Lighting and Ignition
KLAXON Horns
HARRISON Radiators
ROCHESTER Carburetors
DELCO Hydraulic Brakes

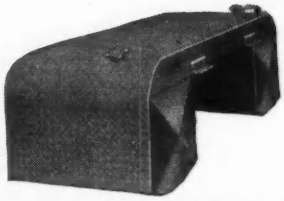


SNYDER SAFETY TANKS

A reflection of confidence in safety, dependability, and proven performance.



Snyder Safety Cylinder Tank and Tool Box Units use up wasted space by providing storage for tools, chains, power jacks, danger flags, etc. The jackwell is upright to prevent possible escape of jack fluid.



Snyder Safety Saddle Tanks occupy wasted space between the cab and fifth wheel. The top deck plate provides a safer means of crossing the chassis and carrying material, hose lines and spare tires. Fuel capacity of 75 to 150 gallons.

Cylinder Tanks are used where space is limited. They are constructed for standard or end fill. Capacity of 28 to 72 gallons.

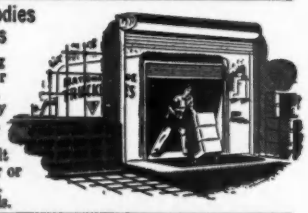
For Catalog and Name of Your Nearest Dealer, Write:

SNYDER TANK CORPORATION

P. O. Box 14, Buffalo 5, New York — P. O. Box 2390, Birmingham 1, Ala.

HEAVY DUTY
MOTOR TRUCKS
•
GASOLINE ELECTRIC
GENERATING SETS
DUPLEX
TRUCK COMPANY
LANSING, MICHIGAN

KINNEAR
STEEL ROLLING DOORS
For Truck Bodies and Buildings



Kinnear Rolling Doors save floor and wall space, open completely out of the way, and give extra protection. Built any size; motor or manual control. Write for details.

THE KINNEAR MFG. COMPANY
2100-20 Fields Ave. • Columbus 16, Ohio

Private Truck Owners

Continued from page 208

rates which must be added to the price of the produce, affect sales.

Mr. Bowling reviewed some of the activities of the year which reaffirmed the right of certain classes of motor carriers to exemption from federal regulation under the Interstate Commerce Act. In this connection he touched upon the Harwood Case, the Chester Morton Love Case, the reopening of the Monark Egg Case, and the Lenoir, Schenley and Parker-Dunn decisions by ICC. The far-reaching and precedent-making events in 1949 at the Commission and before the courts, concerning transportation under federal law are of vital importance to all producers and shippers of goods in interstate commerce, he stated. As a result, transportation is more flexible, and this spells better service, and lower transportation costs to the shipping and consuming public.

Speaking for the truck-trailer manufacturing industry, John B. Hulse, outlined new developments in the motor equipment field. He spoke of the increasing use of light metals, longer trailers for over-the-road use, city-type "short" trailers for metropolitan areas and utilization of tandem axles as practical patterns for future developments. He emphasized the importance of the present trend in safer, more comfortable cabs and praised the trend toward more functional design in trucks and tractors.

At the meeting of the board of directors on Friday, only a few changes were made in personnel. A. H. Krueder, of Wilson and Co., was elected central vice president, replacing G. H. Sibley. New directors are Leon Banigan, of Fleet Owner; H. J. Carroll, of Goodyear Tire and Rubber Co.; and Fred Hufnagel, of Sun Oil Co.

END

Please resume your reading on P. 162

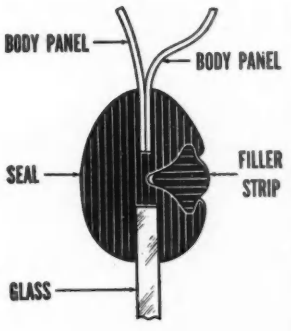
FRINK SNO-PLOWS
REG. U.S. PAT. OFF.
• **Both "V" TYPE and ONE WAY BLADE TYPE**
hand or power hydraulic control
FOR ALL MOTOR TRUCKS FROM 1½ to 10 TONS
FRINK SNO-PLOWS, INC., CLAYTON, 1000 Isl., N.Y.
DAVENPORT-BESLER CORP., DAVENPORT, IOWA
FRINK SNO-PLOWS OF CAN. Ltd., TORONTO, ONT.

BETTER than Ever Before

FOR ENGINE BEARINGS
CLUTCH PLATES AND PARTS
CHASSIS PARTS
Monmouth TRADE MARK *is the name*

For better traction
Use **CLAW**
Double-Duty TRUCK CHAINS
Columbus McKinnon Chain Corporation
TONAWANDA, N. Y.

Here's where "Never" really rhymes with "Weather"



See how easy it is? The seal goes readily into the body panel or adjacent glass. Then the glass slips into the seal. Then the filler strip is zipped into the locking channel. Window or windshield is weatherproofed for keeps. Simple, easy, fast, economical.

Windows and windshields in your buses, trucks, cabs or other vehicles will *never* succumb to *weather* if they are set with Inland Self-Sealing Weather Strip. You'll have *no* leaks . . . to annoy passengers, to injure cargo, to take the vehicle out of profitable operation for maintenance.

Inland Self-Sealing Weather Strip means positive weatherproofing in any weather. It's proof against rain, snow, sleet or ice. And when broken glass must be replaced, it's a fast, easy, one-man job, the Inland way . . . without preparation, sub-assembly, cementing, reworking or clean-up. That too cuts maintenance costs, and reduces the operating time lost in maintenance.

Let Inland Self-Sealing Weather Strip protect you, cut your costs and increase your profits. Be sure to specify it as original equipment.

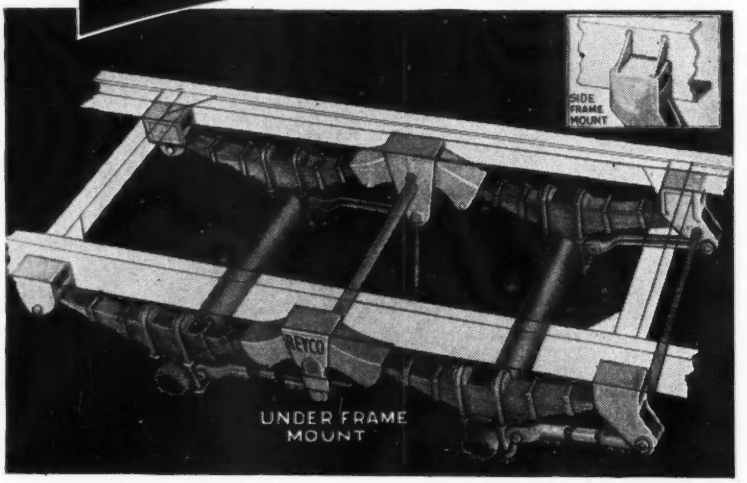
INLAND MANUFACTURING

Self-Sealing WEATHER STRIP

(PATENTED)

INLAND MANUFACTURING DIVISION • General Motors Corporation • DAYTON, OHIO

THE REYCO TANDEM



BEST ON THE LONG HAUL

HERE ARE 4 REASONS WHY

1 MAINTENANCE COSTS CUT: Virtual elimination of wearing parts helps provide maintenance-free operation. The Reyco Tandem has only two points that need lubrication, and these only after 50,000 or more miles of service. Extra large needle bearings supporting center equalizers assure a big margin of safety.

2 NEW, EASY GLIDE-RIDE: Cargo damage is eliminated as loads are equalized and wheel-bounce is prevented by this three-point suspension-type tandem unit. The 42-inch springs are fully-progressive, providing a cushioned ride for light loads and adequate strength for maximum loads.

3 EQUAL, SMOOTH BRAKING: No brake reaction is imposed on the springs... their only function is to carry the load, and equal, smooth braking is accomplished on all four wheels. Positive alignment and maximum protection against tire drag and scuffing is assured by fully adjustable rubber-bushed radius rods, all four of which pull.

4 LOADS ALWAYS BALANCED: Even when each wheel is on a different level, or regardless of operating conditions, your trailer load is always evenly distributed on each axle and each wheel.

Exclusive Manufacturers Under
FRAZIER PATENTS

REYNOLDS MANUFACTURING CO.

SPRINGFIELD, MISSOURI

How Valvoline Keeps Your Motors Extra Safe in the

The DANGER ZONE is that last few hundred miles before the oil change. Here many motor oils break down, because they have been treated to cover up failings of an inferior crude oil.

VALVOLINE MOTOR OIL

Gives Full Protection in the DANGER ZONE

Valvoline is made from the world's finest, toughest, most durable crude oil—100% Pennsylvania. It keeps *every one* of its protective qualities — right through the Danger Zone.

Valvoline Increases Motor Life Up to 20% Because—

1. Valvoline keeps its body throughout the *Danger Zone* — stands up under extreme heat and pressure. It rates a *natural* Viscosity Index of over 100 — without artificial improvers.
2. Valvoline resists chemical effects of hot gases and other trying conditions in your motors. Its strength of body and other protective factors come from the superfine crude.
3. Valvoline keeps your motors clean. The added cleaning ingredient stays on the job throughout the Danger Zone—because the oil itself has highest resistance to chemical change.
4. Valvoline has the world's longest record of successful service to American fleets — in every type of unit — every kind of operation. Valvoline will keep *your* units on the job — at lower cost per mile.

FREE to Valvoline Users
Valuable Laboratory Service

Crankcase drainings analyzed — with suggestions on correcting mechanical and operating conditions of your units—for greater oil economy and engine safety.

ASK YOUR VALVOLINE MAN

FREEDOM-VALVOLINE OIL COMPANY
Freedom, Pennsylvania

New York, Toronto, Pittsburgh, Jacksonville, Atlanta, Detroit, Cincinnati, Chicago, Los Angeles, San Francisco, Portland, Seattle, Vancouver, B. C.

DELCO-REMY
ELECTRICAL EQUIPMENT

has Everything that Counts

Fleetmen know the value of a trusted name. Through the years the name Delco-Remy has become a symbol of dependability.

Popularity of a product is important, too. Delco-Remy electrical equipment is original equipment on leading makes of trucks, buses and commercial cars.

Replacement parts can be vital to hard-working fleets. Delco-Remy makes all units needed for replacement . . . not just quick-profit items. Whether you operate new models or old, Delco-Remy has the parts you need for Delco-Remy-equipped vehicles.

And finally, fleetmen know that no product is better than its sales and service organization. Delco-Remy electrical equipment is sold through a nationwide network of wide-awake distributors.

Delco-Remy
DIVISION, GENERAL MOTORS CORPORATION
ANDERSON, INDIANA

UNITED SERVICE MOTORS

DELCO-REMY— A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

WHEREVER WHEELS TURN OR PROPELLERS SPIN

Use Armet custom truck body parts for greater profit...more customer satisfaction

ACCURATE ESTIMATES • SIMPLE ASSEMBLY • DESIGN FLEXIBILITY

At last you can obtain from one source of supply—everything except outer skin and flooring for the construction of fine custom truck bodies. Moreover, this new Armet line is made by a manufacturer with twenty-five years of experience in precision fabrication.

Armet bodies are easy to assemble—no elaborate facilities are needed. You can order the required parts for any given type of custom truck body, special single items, or repair parts as you need them. Standardization of sizes guarantees easy repairs. Armet's wide variety of sizes and shapes assures utmost flexibility of design—and eliminates waste.

Avoid large and costly inventories—buy from Armet. Don't wait for vital parts—we can ship from stock. Merely select the parts you will need from the Armet catalog and send in your order. You can quote estimates accurately and quickly for definite costs are available.

Satisfied customers are repeat customers so try the Armet plan of custom truck body construction—it means more business at greater profit to you. A-2010

If you do not already have your Armet catalog, write for it today.

custom
truck body parts
ARMET

ARTISAN METAL WORKS COMPANY
11400 Madison Avenue
Cleveland 2, Ohio

here

come

bigger

savings

WHEN that battery goes into one of your units, you're on your way to bigger savings — because that battery is double-insulated with Fiberglas* Battery Retainer Mats.

These mats have earned the thanks of fleet owners from coast to coast by holding the power-producing lead oxides against the plates longer . . . by adding to battery life . . . by keeping trucks rolling through the toughest schedules . . . by giving owners big savings.

Ask *your* supplier about the batteries that *save*—the batteries that are double-insulated with Fiberglas Battery Retainer Mats. Owens-Corning Fiberglas Corporation, Dept. 49-B, Toledo 1, Ohio.

FIBERGLAS IS IN YOUR LIFE... FOR GOOD!

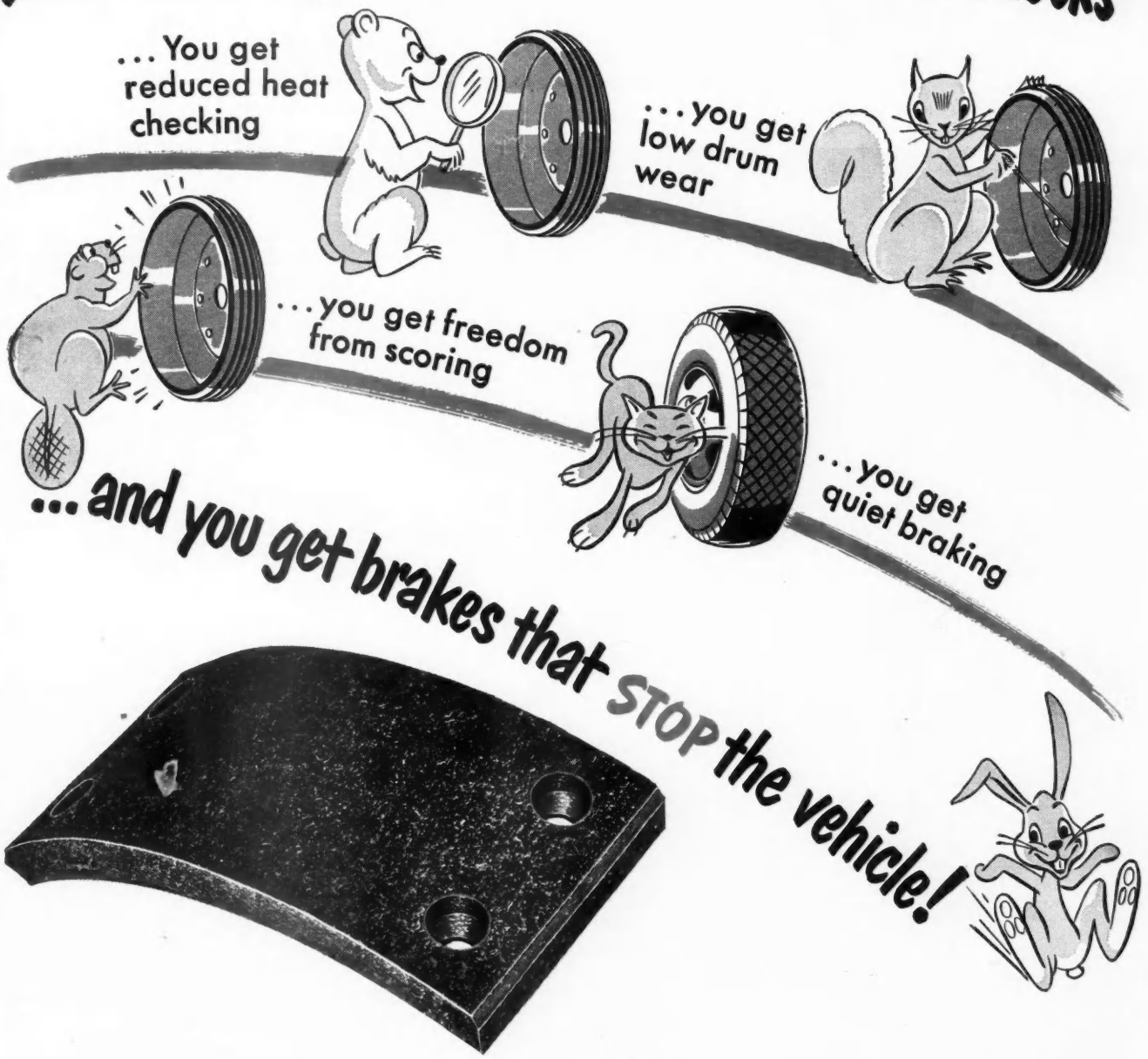
For Longer, Better Service . . . Get Batteries DOUBLE-INSULATED with

OWENS-CORNING

FIBERGLAS

**Fiberglas is the trade-mark (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with glass fibers.*

Drums last longer with Johns-Manville Brake Blocks


... You get reduced heat checking
... you get low drum wear
... you get freedom from scoring
... you get quiet braking
... and you get brakes that STOP the vehicle!

Installed on many leading city and cross-country fleets—where it's stop and go twenty-four hours a day, day in and day out—the new Johns-Manville Brake Block formulations have built a reputation for endurance and stopping ability.

Based on years of research, their scientifically balanced formula was developed especially by the Johns-Manville Laboratory to provide slow, even wear . . . to prevent costly scoring and checking of drum surfaces . . . and to give the longest, most economical brake block life without trouble.

They have been subjected to countless tests on the Heat Check Analyzer—an exclusive Johns-Manville laboratory device that tests both block life and drum life. Their performance has been proved in thousands upon thousands of miles of service on trucks and buses of every description . . . J-M Brake Blocks will give you fewer pull-ins, better block and drum life, and the most mileage at the lowest operating cost. Test a set of J-M Brake Blocks on your next pull-in . . . and see for yourself how they perform.

PRODUCERS OF THE FAMOUS 4-STAR FLEET TESTED SETS

Johns-Manville ASBESTOS FRICTION MATERIALS

THE *FIRST* NAME IN ASBESTOS BRAKE LININGS

Always use General Electric "All-glass" headlamps: they do not grow dim!

"ALL-GLASS" sealed beam HEADLAMPS
THIS IS A G-E "ALL-GLASS" HEADLAMP
THIS CUTAWAY SHOWS WHY A G-E HEADLAMP DOES NOT GROW DIM!
ONE PIECE CONSTRUCTION KEEPS OUT DIRT AND MOISTURE
FILAMENTS ANCHORED TO WITHSTAND VIBRATION
RUGGED HARD GLASS PRECISION LENS
MIRROR-LIKE REFLECTOR STAYS BRIGHT FOR LIFE

Road and laboratory tests prove that, on the average, G-E Sealed Beam Headlamps maintain 99% of original light right up to the end of lamp life.

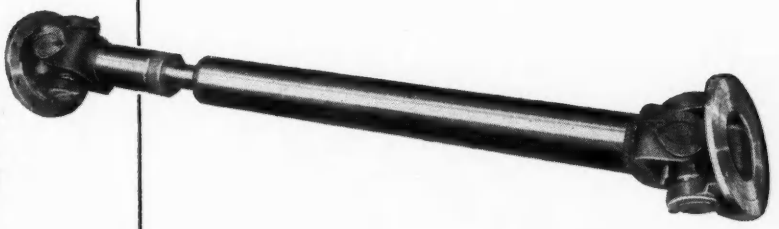
NOTE: Check lights regularly... replace all burnouts with G-E lamps

You can put your confidence in—

GENERAL ELECTRIC

vibration has its place

BUT NOT IN YOUR TRUCK'S PROPELLER SHAFT . . .



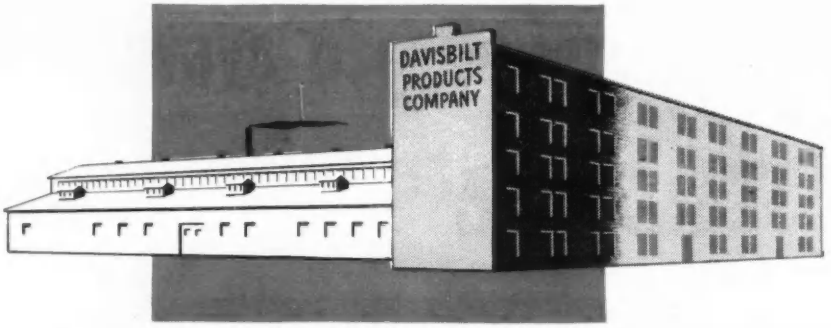
BLOOD BROTHERS Universal Joints for S-M-O-O-T-H power transmission

Microscopic accuracy and perfect balance keep Blood Brothers Universals and Shafts running smooth and true through endless hours of operation. High speeds . . . heavy pulls . . . sharp speed changes . . . quick starts . . . sudden stops . . . strains of every description — are all in the day's work for trucks — and the universals that keep them moving. A generation-long company tradition that puts perfection ahead of production is responsible for making Blood Brothers Universal Joints a favorite among automotive design men. We'll be glad to consult with you regarding universals to suit your particular needs — or forward a catalog containing specifications and applications.

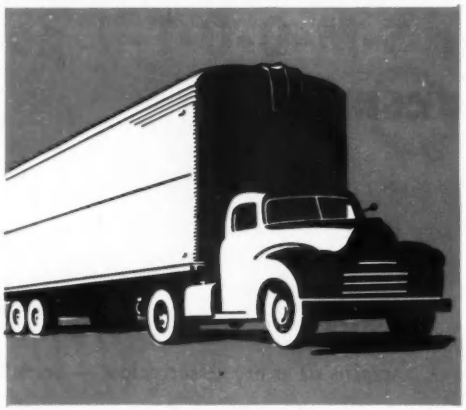
BLOOD BROTHERS machine co.

ALLEGAN, MICHIGAN Chicago Office: 122 S. Michigan

A Division of Standard Steel Spring Co.



There're some 'BIG DOINGS' up Edgerton Way



We all know that lots happens when new management, a strong capital setup, and new ideas come into an old, well-established company. Here are just a few of the "big doings" that are going on at the Highway Trailer Company in Edgerton, Wisconsin—news events that are bound to interest everyone in the trucking industry.

HIGHWAY BUYS DAVISBILT

Highway expands—buys Davisbilt Products Company of Cincinnati. Now Highway has a complete line of trailerized tanks and truck tanks for you.

NEW ALL-ALUMINUM TRAILER HEADS HIGHWAY LINE FOR '50

Here's the very latest in lightweight trailers. It's the new All-Aluminum Headliner by Highway. Watch for it!

EVERY TRAILER MADE BY HIGHWAY BEING REVAMPED AND IMPROVED

Yes, sir, you'll see the most advanced line of trailers in the industry when you see Highway's 1950 line.

PUBLIC UTILITY EQUIPMENT BEING CONSTANTLY IMPROVED

An expanded engineering staff is at the service of America's public utilities and oil field operators to provide better and better truck bodies and equipment.

HIGHWAY TRAILERS *On Every* U.S. 50 *Highway*

Headquarters Edgerton, Wisconsin

In the new International Trucks-
New curved "Sweepsight" windshields
– clear vision windows *by Pittsburgh*

Outdoor Visibility. Safety Glasses by Pittsburgh give drivers clear visibility in all directions in the new International "Comfo-Vision" cabs. The super-size one-piece "Sweepsight" windshield, scientifically curved to minimize eyestrain and reduce glare, gives drivers maximum, unobstructed front view. Additional vision through large door and twin rear windows also helps promote driver efficiency, safety and peace of mind. In short, greater "see-ability" in all directions is assured by Pittsburgh Safety Glasses.

Many improvements in truck cab design and construction have been made practical by Pittsburgh developments in Safety Glasses. For instance, curved "Sweepsight" windshields, which are now standard equipment in International "Comfo-Vision" cabs—the first of this type to be used in any line of trucks—were first mass produced by Pittsburgh.

This is typical of Pittsburgh's continued policy of keeping abreast of—and sometimes anticipating—the changing needs of the trucking industry. For many years we have been supplying Safety Glasses for windshields, windows and back lights whose uniformly high quality is maintained by continued research, unexcelled manufacturing equipment and the lifetime experience of the Pittsburgh staff.

That is why so many truck manufacturers have for years equipped all their new trucks with Pittsburgh Safety Glasses – why so many fleet owners have standardized on Pittsburgh glass parts for all replacements.

Pittsburgh factory-finished glass replacements can be had from firms who specialize in the distribution of glass parts for trucks of all sizes and makes. We shall be glad to send you the name of our nearest distributor. From him you can get Safety Glass whose long and satisfactory service is guaranteed by the Pittsburgh trade-mark. Pittsburgh Glass Company, Room 2039-0, Grant Building, Pittsburgh 19, Pa.

Safety Glass **BY PITTSBURGH**

DUPLATE SAFETY PLATE GLASS • DUOLITE SAFETY WINDOW GLASS

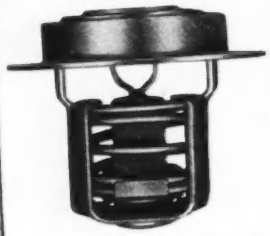
PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS

PITTSBURGH PLATE GLASS COMPANY

Save Gas and Oil

BY REPLACING WORN THERMOSTATS

with **DOLE** "DV's" or "ADJUSTABLES"



High-Efficiency DV

Designed for 1948 and later cars and trucks to handle high pump pressure . . . and for use with pressure caps in sealed cooling systems. Positive-acting thermal unit assures remarkable results in economy and performance.

All-Season ADJUSTABLE

Dole adjustable thermostats improve motor performance by accurate temperature control for every season and type of anti-freeze. You get quick warm-up, reduced crank case dilution and less engine wear—plus important savings in gas and oil.

CONTROL WITH DOLE

THE DOLE VALVE COMPANY

1901-1941 Carroll Avenue — Chicago 12, Illinois

Representatives in Principal Cities

EVERY MECHANIC AND EVERY SHOP NEEDS THESE

RIMAC

TIME AND LABOR SAVERS

1—*Ring-Master* **PISTON RING COMPRESSOR** No. 220—for cars and light trucks. Capacity 2⅛" to 5". Ht. 3⅛". Larger sizes for trucks, tractors, and Diesels.

2—**RING GROOVE CLEANER** No. 122 — Removes carbon from grooves, all pistons from smallest to 6".

3—**COMPRESSION INDICATOR** No. 61—Range 0 to 160 lbs.
VACUUM INDICATOR No. 66—Range 0 to 30 in.

4—**SPRING TESTER** No. 67 —For valve and Clutch Springs.

5—**FLEX - STONE** No. 1— Contact Point Dressers. No. 2 — Extra thin and fine for voltage regulators.

Write for Complete Rimac Catalog.

RINCK-McILWAINE, INC., 16 Hudson St., New York, N. Y.

Roller Bearing **PUMP**
with the
NON-THRUST *feature*

ADDS UP TO 700% TO THE LIFE OF ANTHONY DUMP TRUCKS

THE HEART of a dump truck—the pump—plays as important a part in the operation of a dump truck as your heart does to you. And when the pump fails, the hoist fails and the truck stops working. That is why Anthony engineers place such emphasis on the pump.

The amazing patented "NON-THRUST" design of the Anthony roller-bearing pump is found in no other hoist at any price. Unlike conventional pumps, its design eliminates the No. 1 cause of pump failure—destructive mechanical thrust on the gears. This pump has an unequalled field performance record. For *dependable service* DEPEND ON ANTHONY HYDRAULIC HOISTS with the "NON-THRUST" Pump.

ANTHONY COMPANY

STREATOR, ILL.

GET RID OF GAS FUMES

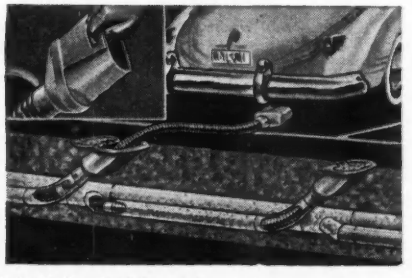
Solve This Serious Problem With a National Approved Underfloor System

For the garage owner planning a new building or extensive remodeling, National has designed and engineered 3 systems for effective removal of poisonous carbon monoxide gas and smoke. National underfloor systems are completely fabricated at factory and shipped in packaged kit—nothing else to buy. Proven adequate and dependable, National has thousands of installations in every part of the U.S. Send a rough drawing of your service area, showing stall positions. We will gladly supply you with plans to suit your needs. Literature on request.

Standard kit, 2 floor inlets serving any 2 of 4 cars in a row.

$319.50

F.o.b. Decatur. Complete packaged unit, including motor and blower — underfloor duct work (for encasing in poured concrete). Additional car service extension, $45 each. Note in illustration that tube disappears without entering main trunk line—for balanced flow of air through main duct and perfect exhaust gas removal.



National also makes a complete package kit for Overhead installations—$187.50. Flexible metal hose, motor and blower units, cast aluminum floor assemblies and accessories available. *Write for complete catalog.*

THE NATIONAL SYSTEM OF GARAGE VENTILATION

World's Largest Manufacturer of Exclusive Garage Ventilating Equipment

DEPT. 12A, 318-330 N. CHURCH ST., DECATUR, ILLINOIS

Safety Sam Says—

ALL BRAKE FLUIDS ARE **NOT** ALIKE

USE ONLY SAFE BRAKE FLUIDS!

As one of the country's largest manufacturers of chemicals puts it—

> "Some brake fluids are as much of a fraud as a $500 engagement ring of glittering paste—and much more dangerous."

In servicing the brakes on your vehicles, you will be performing a *safety service* as well as a brake service if you refill the cylinder with a fluid which meets the standard set by the Society of Automotive Engineers (SAE).

You are perfectly safe in using Delco Super 9 (for regular or "moderate" duty) and Delco Super 11 (for heavy duty) because these fluids even *exceed* the SAE specifications.

You'll never regret the few extra pennies it costs *to be safe*—with Delco.

UNITED SERVICE MOTORS

DELCO BRAKE—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

Delco SUPER 9 AND SUPER 11 BRAKE FLUID • DECLENE • BRAKE PARTS
STANDARD FOR EQUIPMENT • THE STANDARD FOR REPLACEMENT

MORAINE PRODUCTS DIVISION OF **GENERAL MOTORS**

1 plan helps prevent all 3

When you show the people in your company that you're interested in their welfare, they naturally react favorably. That's why *production goes up* when you boost your employee-participation in the Payroll Savings Plan. Here's how it happens:

The more U. S. Savings Bonds an employee holds, the more secure he feels. The more secure he feels, the greater his peace of mind—the more contented, careful, and productive he is on the job.

Those facts aren't just something we dreamed up. They're borne out in the experience of more than 20,000 companies promoting the Plan.

Everybody Benefits!

Bond sales spread the national debt, thus increasing our national economic security. And, of course, what's good for the nation is good for you and your business!

The individual Bond buyer gets back $4, when his Bonds mature, for every $3 he invested. That's a boon for him, and —multiplied by millions of Bond holders —represents a huge backlog of purchasing power that will help assure national prosperity through the years ahead.

Five Steps Boost Participation

1. See that a top management man sponsors the Plan.

2. Secure the help of the employee organizations in promoting it.

3. Adequately use posters and leaflets and run stories and editorials in company publications to inform employees of the Payroll Savings Plan's benefits to them.

4. Make a person-to person canvass, once a year, to sign up participants.

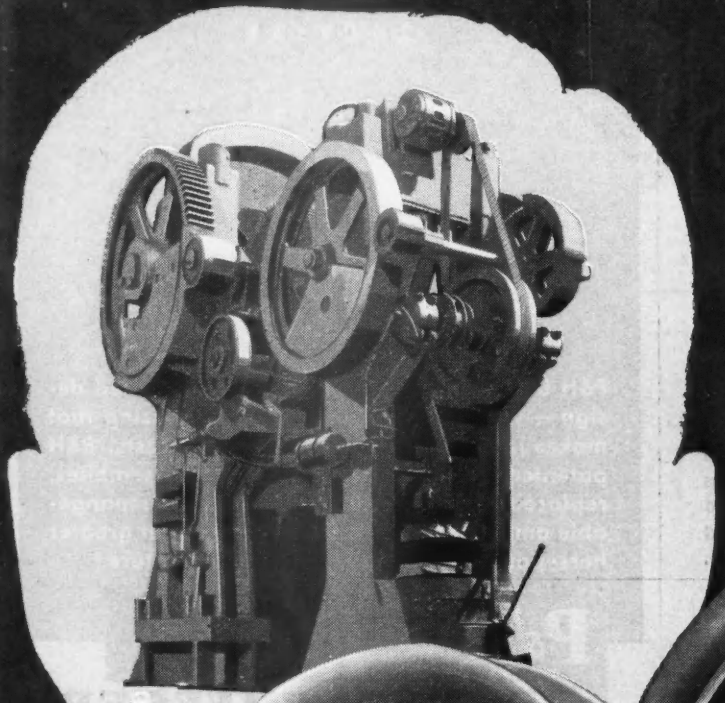
These first four steps should win you 40-60% participation. Normal employee turnover necessitates one more step:

5. Urge each new employee, at the time he is hired, to sign up.

Nation-wide experience indicates that 50% of your employees can be persuaded to join—without high-pressure selling. All the help you need is available from your State Director, U. S. Treasury Department, Savings Bonds Division. He is listed in your telephone directory. Wouldn't it be a good idea to call him right now, while it's on your mind?

The Treasury Department acknowledges with appreciation the publication of this message

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and The Advertising Council.

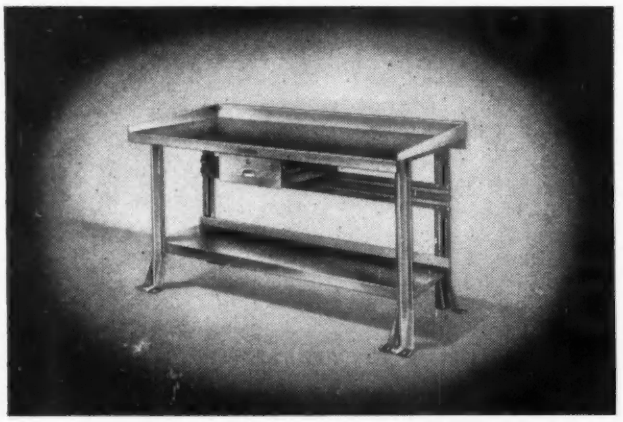


Kelsey Hayes

symbol of *Know How* for over 40 years

KELSEY-HAYES WHEEL COMPANY PLANTS:

• Four Kelsey-Hayes Plants in Michigan
• McKeesport, Pennsylvania • Davenport, Iowa
• Los Angeles, California • Windsor, Ont., Canada



The HALLOWELL WORK BENCH OF STEEL

Standardized, *ready-made* HALLOWELL Work Benches save trouble and expense of "building your own"; provide superior equipment for maximum productivity.

Interchangeable units readily adaptable to individual requirement. Easily bolted together to form continuous bench, yet may be taken down and reassembled as single units. Rigid, heavy-duty construction eliminates bolting to the floor, minimizes installation and maintenance.

HALLOWELL Work Benches do credit to any plant. Functional design and attractive appearance encourages better plant housekeeping and worker performance.

Full details in Bulletin 701.

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 5, PENNSYLVANIA

FEL-PRO GASKETS

copper
steel
black

Fel-Pro Head Gaskets

Fel-Pro Complete Sets

Fel-Pro Fiber Packing Rolls

Fel-Pro Cutter Washers - Gaskets

FEL-PRO FIT Means Lower Maintenance Cost!

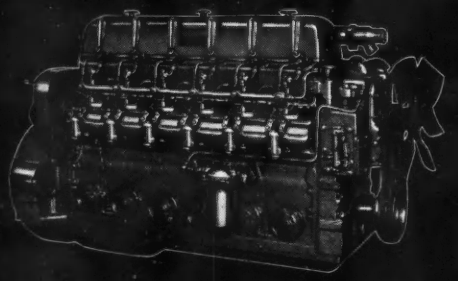
You can depend on Fel-Pro to deliver FIT and Performance that brings longer service life—less breakdowns and out-of-service losses! That's why Fel-Pro has won thousands of friends among fleet maintenance men...and the favor of the most critical buyers, the engine builders and car factories, many of whom standardized on Fel-Pro. When you re-gasket, insist on Fel-Pro FIT! Write for the new Fel-Pro "Quick-Reference" Catalog TODAY! 3495-CC

FEL-PRO tect

FELT PRODUCTS MFG. CO.
1520 CARROLL AVE., CHICAGO 7, ILLINOIS

P&H DIESEL ENGINES

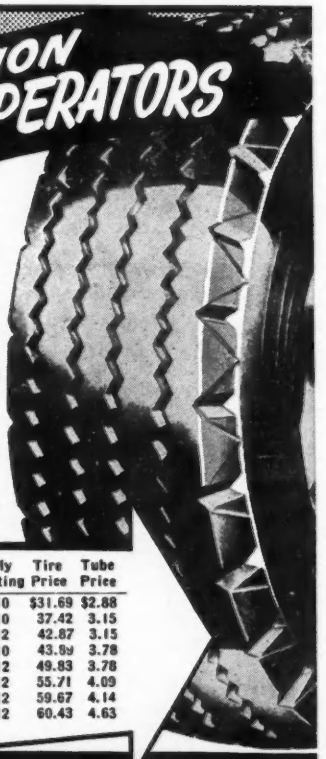
2 - CYCLE



P&H Diesel Engines are of greatly simplified design — with a speed and ease of servicing that makes important savings in time and costs. P&H patented cylinder head and liner assemblies, replaceable in only 40 minutes, are interchangeable among all models. P&H Diesels offer greater horsepower per pound. Write for literature.

P&H DIESEL DIVISION
HARNISCHFEGER CORPORATION
PORT WASHINGTON WISCONSIN, U. S. A.

ATTENTION TRUCK OPERATORS



Big Savings on truck tires and tubes.

The famous Vanderbilt BX-44 Truck Tire—rayon construction—no better truck tire at any price. Factory fresh—guaranteed firsts.

CHECK THESE LOW PRICES
MADE POSSIBLE BECAUSE:

- ✓ Direct factory shipment.
- ✓ Elimination of all distribution and handling costs.
- ✓ Our low factory, cost-plus, price passed on to you.

Size	Ply Rating	Tire Price	Tube Price	Size	Ply Rating	Tire Price	Tube Price
6.00-16	6	$11.50	$1.29	7.50-20	10	$31.69	$2.88
6.50-16	6	13.38	1.44	8.25-20	10	37.42	3.15
6.50-20	8	19.89	2.10	8.25-20	12	42.87	3.15
7.00-15	6	14.97	1.46	9.00-20	10	43.89	3.78
7.00-16	6	15.21	1.46	9.00-20	12	49.83	3.78
7.00-20	8	21.41	2.36	10.00-20	12	55.71	4.09
7.00-20	10	27.30	2.36	10.00-22	12	59.67	4.14
7.50-16	8	20.89	1.90	11.00-20	12	60.43	4.63
7.50-20	8	25.45	2.88				

Terms Net F.O.B. Factory, Buffalo, N. Y.
FEDERAL EXCISE TAX ADDITIONAL

FOR FULL DETAILS COMMUNICATE WITH MAIN OFFICE —

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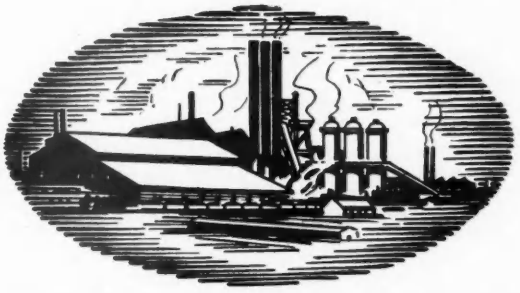

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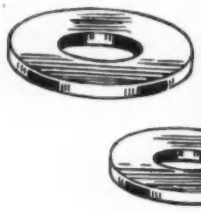

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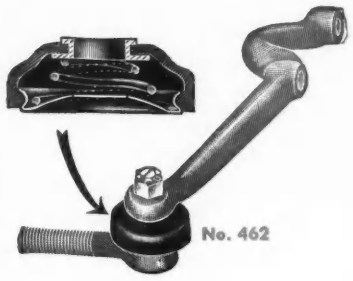
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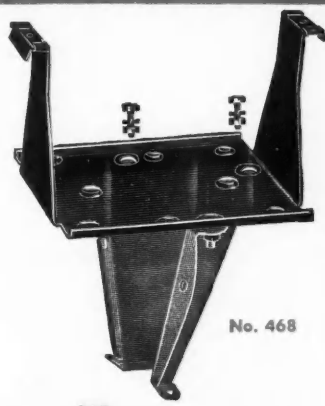
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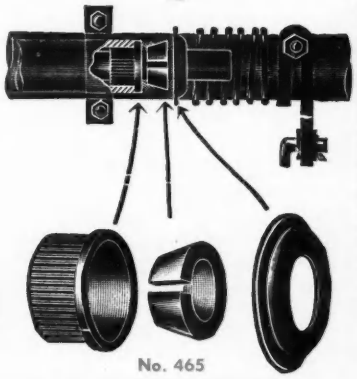
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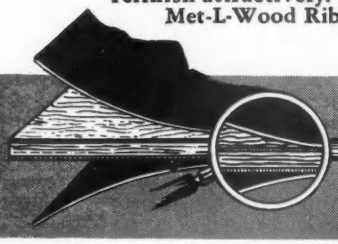

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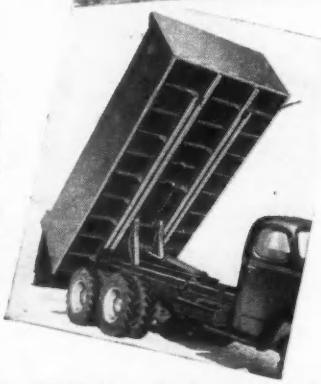

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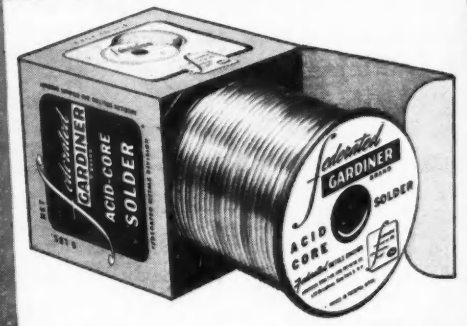

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